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Wolters Kluwer HMDA *Wiz*

Technical Integration Guide for HMDA DF

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Table of Contents

Version History.....	4
1. Introduction	8
2. HMDA <i>Wiz</i> Web Services	9
2.1 Single & Batch Mode Processing	11
2.2 Single Record Processing	11
2.3 Batch Processing	11
2.3.1 Batch Processing – Timeout Setting	12
2.4 IP Filtering/Whitelisting	12
3. HMDA <i>Wiz</i> Web Service Connection Protocols	13
3.1 XML Schema.....	17
4. Geocoding.....	18
4.1 Authentication Information: <authentication> Element.....	20
4.2 Strictness and Fall-back Information: <settings> Element	20
4.3 Address Information: <property location> Element.....	23
4.4 Demographic Information: <demographic_vars> Element	23
4.5 Matched Address Information: <matched_address> Element.....	26
4.6 Geocoding Information: <census_info> Element	27
4.7 Input Address Information: <input_address> Element	27
4.8 Standardized Address Information: <standardized_address> Element	27
4.9 Match Status Information: <status> Element.....	28
5. Edit Check	30
5.1 Loan Identifier Information: <loan_identifier_information> Element	33
5.2 Loan Information: <loan_information> Element.....	34
5.3 Action Information: <action> Element	39
5.4 Property Location Information: <property_location> Element.....	41
5.5 Property Information: <property_information> Element	41
5.6 Geocoding Information: <census_info> Element	44
5.7 Applicant Information: <applicant_info> Element	45
5.8 Co-Applicant Information: <co_applicant_info> Element	47
5.9 Underwriting Information: <underwriting_information> Element	49

Consumer Compliance Solutions

- 5.10 Purchaser Information: <purchaser_type> Element56
- 5.11 Denial Reasons: <denial_reasons> Element57
- 5.12 Pricing Information: <pricing_data> Element.....58
- 5.13 Interpreting Edit Check XML Responses61
- 5.14 Error Code Information: <editchecks> Element62
- 6. Rate Spread Service63
 - 6.1 Interpreting Rate Spread XML Responses65
- 7. Get LAR Service66
 - 7.1 Interpreting Get LAR XML Responses67
- 8. Insert Record Service67
 - 8.1 Authentication Information: <authentication> Element.....74
 - 8.2 LAR Service: <settings> Element.....74
 - 8.3 Manual_Geocode Element75
- 9. Report Service.....75
 - 9.1 Report Service: <settings> Element.....75
 - 9.2 Report XML Request for HMDF 2018.....77
 - 9.3 Interperating Reports XML Responses81
- 10. Submission Service.....81
 - 10.1 Submission XML Request for HMZ4 2016 and prior years81
 - 10.2 Interpreting Submission XML Responses.....83
 - 10.3 Submission XML Request for HMZ4 2017.....83
 - 10.4 Interpreting Submission XML Responses for HMZ4 201785
 - 10.5 Submission Service: <settings> Element for HMDF 2018.....86
 - 10.6 Submission Service XML Request for HMDF 2018.....88
 - 10.7 Interpreting Submission and Report XML Responses for HMDF 201892
 - 10.8 Submission and Report Service XML Request for HMDF 2018.....92
 - 10.9 Interpreting Submission and Report XML Responses for HMDF 201897
- 11. Fair Lending.....98
 - 11.1 Fair Lending Information: <fairlending_information> Element.....98
- 12. HMDA *Wiz* Website Overview99
 - 12.1 Data Files.....100
 - 12.2 Edit.....101

Consumer Compliance Solutions

				D - Removed references to Revenues as it is not applicable to HMDA DF
7/21/2020	1.0 or prior	CL	Patrick McEvoy	CL - Whitelist Fully Qualified Domain Name - FQDN (Supported)
9/19/2019	1.0 or prior	E	Patrick McEvoy	E - Optional update - Enabled Default values for action (1) and action date (today) for rate spread request, so that rate spread can be calculated for hmz4 and hmdf loans, even if action and action date are not provided. See Section 2.2 Rate Spread Service for a sample request.
3/1/2019	1.0 or prior	CL, R, E	Patrick McEvoy	<p>E - Year Specific Edit Checks</p> <p>R - Activity Year 2019 Edit check functionality is now available for HMDA DF Files for both individual records and batches.</p> <p>R - CFPB add values for Automated underwriting system result and modified value descriptions for Credit Score</p> <p>CL - HMDA Wiz integration partners are required to update their request timeout setting to avoid timeout response errors. This time setting provides the application wait time for a response before saying that the server isn't responding. We recommend that request timeout should be set for 15 minutes or longer so that larger files have time to process. See section 1.3.1 Batch Processing - Timeout Setting</p>
11/15/2018	1.0 or prior	D, CL, R, E	Patrick McEvoy	CL - All data elements within the request will be validated by column code by data type and size, any data elements not matching this criteria will nullified with the exception of open text elements will be truncated

				<p>and numbers where the scale will be truncated.</p> <p>R - Senate Bill 2155 Added exemption support for the Economic Growth, Regulatory Relief, and Consumer Protection Act. Edit Check, Insert/Update, Report, and Submission Services modified to include an is_exempt tag (optional) at the record level. <code><is_exempt>>true</is_exempt> = Exempt Record</code></p> <p>E - New Geocoding Service response elements: County_5 and Tract_11 - The 5 digit county and 11 digit tract numerical codes for where the property is physically located. (Note: This information is provided by the Geocoding Service response only).</p> <p>CL - Geocoding Service logic to process the 5 digit county and 11 digit tract numerical codes when passed in county_fips and census_tract will now parse the data to state_fips, county_fips, and census_tract. Available in 4.2 SP2 currently in production.</p> <p>CL - Rate Spread request and response samples updated to include action tags</p>
8/24/2018	1.0 or prior	D, CL, R, E	Patrick McEvoy	<p>E - Update support email: HMDAWizSupport@wolterskluwer.com</p> <p>CL - 2018 HMDF Submission request and response samples added.</p> <p>CL - Report Service request and response samples added.</p>

Consumer Compliance Solutions

				E - Bug fixes related to 2018 Submission and Report Services:
7/18/2018	1.0 or prior	D, CL, R, E	Patrick McEvoy	<p>R, CL - Rate Spread request and response samples added. Request defaults to HMDA DF and added tag for Lar Type. (4.2)</p> <p>E - Insert record service updated for HMDA DF to include first and last name. (4.2 SP1)</p> <p>D - 2018 HMDF Submission request and response samples removed and will be provided in the next release. (4.2 SP2)</p> <p>D - Report Service request and response samples removed and will be provided in the next release. (4.2 SP2)</p> <p>D - Removed Dashboards</p>
4/13/2018	1.0 or prior	CL, R	Ron Paulson	<p>Report Service request and response samples added.</p> <p>2018 HMDF Submission request and response samples added.</p>
3/17/2018	1.0 or prior	CL, CU	Patrick McEvoy	Insert / Update request and responses record samples added
1/26/2018	1.0 or prior	R	Ron Paulson	Updated Edit Check response sample.
11/16/2017	1.0 or prior	CL, R	Patrick McEvoy	<p>CFPB October 2017 Updates - Clarification for description on the values coded and corrected spelling mistakes. Correct spelling mistake for 'other_non_amoritizing' which is corrected in 4.1 by removing an 'i'.</p> <p>Both 'other_non_amoritizing' and 'other_non_amortizing' tags are compatible with 4.1 release.</p>

Consumer Compliance Solutions

				Note: 2018 CFPB edits are currently under construction and will be available in January 2018.
07/15/2017	1.0 or prior	CL, R	Patrick McEvoy	CFPB July 2017 Updates - Additional Purpose code = 5 (Not applicable), Credit Score of applicant and coapplicant = 7777 (Credit score is not a number) Updated documentation links to CFPB FIGs
06/23/2017	1.0 or prior		Patrick McEvoy	Initial creation - All existing clients that will keep sending existing format of request will receive existing codes (like before 4.0).

1. Introduction

Wolters Kluwer’s HMDA online data management tool, *HMDA Wiz*, offers users a set of powerful HMDA compliance tools at www.wizenterprise.com. In addition, *HMDA Wiz* functionality can be embedded into Loan Origination Systems using an industry standard Service Oriented Architecture Framework (SOAP). Integrating *HMDA Wiz* into a LOS provides users with the ability to manage HMDA data quality at the time of origination.

Institutions uses *HMDA Wiz* functionality directly through a LOS integration also have the flexibility of accessing their HMDA data directly through their institution specific website on www.wizenterprise.com. Hosted by Wolters Kluwer, clients can log into their website to manage their HMDA data and perform standard HMDA data management tasks including rate spread calculations, edit checks, geocoding and reporting. In addition, *HMDA Wiz* users will have access to a set of standard reports, an easy to use Submission Wizard and view dashboards displaying a visual representation of their lending performance in key HMDA compliance areas.

HMDA *Wiz* solutions are designed to help institutions manage their HMDA compliance program as an ongoing business activity. The combination of imbedded HMDA *Wiz* web services and the data management tools at www.wizenterprise.com provide clients the tools they need to properly manage their HMDA and HMDA DF related processes.

Please direct any questions to HMDAWizSupport@wolterskluwer.com

2. HMDA *Wiz* Web Services

As discussed above, HMDA *Wiz* web services can easily be integrated into your Loan Origination System using the HMDA *Wiz* Web Service API. The HMDA *Wiz* Web Services API is exposed for public consumption as a set of industry standard XML based web services.

HMDA *Wiz* Web Services:

- **Geocoding Service** - The Geocoding Service processes the addresses on loan applications and returns geographic information such as census tract, MSA, county and state codes. While optional, demographic information for census tract returned is also available.
- **Edit Check Service** - The Edit Check Service cross checks the HMDA data in your loan application against the FFIEC’s HMDA data requirements for the specified activity year. The Edit Check Service will return FFIEC error codes and descriptions for records that contain invalid data or require additional verification.

- **Rate Spread Calculation Service** - The Rate Spread Service calculates the spread between the institution's Annual Percentage Rate (APR) and the comparable treasury security using the FFIEC's Average Prime Offer Rate (APOR), APR, application date, action date, action taken, rate lock date, rate type, loan term, fixed term of variable rate and lien status.
- **Get LAR Service** - The Get LAR Service returns a list of the data files that the institution has created.
Note: These data files are hosted by Wolters Kluwer.
- **Insert / Update Record Service** - The Insert / Update Record Service programmatically inserts records into a specified HMDA *Wiz* data file. The Insert / Update Record Service can alternatively be used to update *existing* records in a HMDA *Wiz* file.

All data elements within the request will be validated by column code by data type and size, any data elements not matching these criteria will be nullified with the exception of open text elements will be truncated and numbers where the scale will be truncated.

Whitelist Fully Qualified Domain Name - FQDN (Supported):

Production FQDN - www.wizenterprise.com
Client Test IP FQDN - ct.wizenterprise.com

This document provides instructions on data requirements in the loan/application register for HMDA data collected in 2018. This document is not a substitute for Regulation C. Refer to Regulation C for a complete explanation of the reporting requirement for each data field.

2.1 Single & Batch Mode Processing

HMDA *Wiz* Web Services support both single request and batch processing for the following services:

- Geocoding
- Edit Checks - 2018 CFPB Edits
- Rate Spread Calculation
- Get LAR
- Insert/Update Record
- Report Service for HMDA DF
- Submission Service for HMDA DF

Single record requests for these services translate to real-time results for geocoding, edit check and rate spread functions. In many cases, compliance personnel can view the results of these functions while entering application information.

Conversely, batch processing is an effective method for processing groups of records at once and does not occur in real-time. This process generally occurs after a group of records have been accumulated in a file and a request is sent to Wolters Kluwer for results for the entire group as opposed to individual records.

2.2 Single Record Processing

Single record processing is typically performed when an integration has been built between a client-based application and HMDA *Wiz*. Financial institutions have integrated single record processing into Loan Origination Systems, intranet sites and underwriting systems.

From a development standpoint, the connecting application can either submit the request via a multi-part HTTP post or consume the HMDA *Wiz* web service directly. Request and response formats are defined in Wolters Kluwer supported input and output schemas. The HMDA *Wiz* Master Schema defines data for all business services and each individual service contains a unique schema that defines the required and optional fields for the respective function.

2.3 Batch Processing

Batch processing is typically performed when an integration has been built between a client-based database and HMDA *Wiz*. It is most often utilized for Edit Check and Geocode requests. HMDA *Wiz* supports batch processing for multiple addresses saved in an XML request. As previously stated, requests and responses are defined by the Wolters Kluwer input and output schemas provided in this document.

NOTE: HMDA *Wiz* integration partners are required to update their request timeout setting to avoid timeout response errors. This time setting provides the application wait time for a response before saying that the server isn't responding. We recommend that request timeout should be set for 15 minutes or longer so that larger files have time to process.

NOTE: HMDA *Wiz* integration partners are recommended to implement a 60 second `RetryInterval` to ensure that batch response file is always received.

2.3.1 Batch Processing – Timeout Setting

Step 1: Extending Web Request to set timeout.

```

=====
using System;
using System.Net;

namespace Project1
{
    class CustomWebClient : WebClient
    {
        public int Timeout { get; set; }

        protected override WebRequest GetWebRequest(Uri uri)
        {
            WebRequest lWebRequest = base.GetWebRequest(uri);
            lWebRequest.Timeout = Timeout;
            ((HttpWebRequest)lWebRequest).ReadWriteTimeout =
(Timeout==0)?System.Threading.Timeout.Infinite:Timeout;
            return lWebRequest;
        }
    }
}

```

Step 2: Updating the Web Request to use extended version and to set timeout.

```

=====
using (var client = new CustomWebClient())
{
    client.Timeout = 900000; //15 minutes
    client.Headers.Add("SOAPAction", @"http://www.pciwiz.com/k2server/SubmitBatchRequest");
    client.Headers.Add("Content-Type", @"text/xml; charset=utf-8");

    string url = @"https://www.wizenterprise.com/K2WebService/K2WebService.asmx";
    var data = Encoding.UTF8.GetBytes(completeRequestXml); //completeRequestXml should contain the xml with
    properly escaped content
    byte[] result = client.UploadData(url, "post", data);
}

```

2.4 IP Filtering/Whitelisting

IP Whitelisting is supported and allows for the limiting of access to the system from specific IP addresses or a range of them. IP filtering is done at the account level and applies to all logins and all licensed Wolters Kluwer hosted products. For HMDA Wiz this applies when accessing the application via the user interface or APIs.

The IP Filtering feature uses the public IP address which may be different than an individual computer's private IP address. Each location that accesses the Internet has a unique 'Public' IP address. The public IP address identifies where an Internet request is coming from and where the response is returned.

To enable IP Filtering in Account management, the **Manage IP Filtering** permission must be added to the Manage Security Administration Account Role, the IP Filtering Whitelist must be set up (IP Addresses), and the IP Filtering feature must be enabled.

Note: If this feature is configured incorrectly, all users in the account may be blocked from accessing the software. It is important to have someone with network configuration knowledge involved in the implementation of this feature. Do **not** modify the IP Address Whitelist during regular business hours as users may be negatively affected if changes are made to IP Filtering while using the software.

3. HMDA *Wiz* Web Service Connection Protocols

The only requirement for communication with HMDA *Wiz* web services is a client's ability to send and receive XML messages using one of the following connection protocols:

- SOAP (default)
- HTTP POST
- .NET Remoting

HMDA *Wiz* Web Services are accessed at the following URL:

<https://www.wizenterprise.com/k2webservice/k2webservice.asmx>

The Services provide two request methods:

- SubmitRequest

Requests a single record. Typically used for real-time Geocode, Edit Check and Rate Spread Calculation requests.

- SubmitBatchRequest

Combines many individual requests in a batch. As previously stated, you can use this method for all HMDA *Wiz* Web Services. It is most commonly used for Submission and Report requests.

Services visioning is currently enabled.

Taking advantage of visioning, version tag will need to add to the request.

Sample Single *Request* Format (using SOAP 1.1)

```
POST /k2webservice/k2webservice.asmx HTTP/1.1
Host: www.wizenterprise.com
Version 1.0
Content-Type: text/xml; charset=utf-8
Content-Length: length
SOAPAction: "http://www.pciwiz.com/k2server/SubmitRequest"

<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
  <soap:Body>
    <SubmitRequest xmlns="http://www.pciwiz.com/k2server">
      <inputXmlRequest>string</inputXmlRequest>
      <requestFormat>string</requestFormat>
    </SubmitRequest>
  </soap:Body>
</soap:Envelope>
```

Sample Single Response Format (using SOAP 1.1)

HTTP/1.1 200 OK

Content-Type: text/xml; charset=utf-8

Content-Length: **length**

```
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
  <soap:Body>
    <SubmitRequestResponse xmlns="http://www.pciwiz.com/k2server">
      <SubmitRequestResult>string</SubmitRequestResult>
    </SubmitRequestResponse>
  </soap:Body>
</soap:Envelope>
```

Sample Batch Request Format (using SOAP 1.1)

POST /k2webservice/k2webservice.asmx HTTP/1.1

Host: www.wizenterprise.com

Content-Type: text/xml; charset=utf-8

Content-Length: **length**

SOAPAction: "http://www.pciwiz.com/k2server/SubmitBatchRequest"

```
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
  <soap:Body>
    <SubmitBatchRequest xmlns="http://www.pciwiz.com/k2server">
      <inputXmlRequest>string</inputXmlRequest>
      <requestFormat>string</requestFormat>
    </SubmitBatchRequest>
  </soap:Body>
</soap:Envelope>
```

Sample Batch Response Format (using SOAP 1.1)

HTTP/1.1 200 OK

Content-Type: text/xml; charset=utf-8

Content-Length: **length**

```
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
  <soap:Body>
    <SubmitBatchRequestResponse xmlns="http://www.pciwiz.com/k2server">
      <SubmitBatchRequestResult>string</SubmitBatchRequestResult>
    </SubmitBatchRequestResponse>
  </soap:Body>
</soap:Envelope>
```

NOTE:

As specified above, values for the elements ‘<inputXmlRequest>’, ‘<SubmitRequestResult>’ and ‘<SubmitBatchRequestResult>’ are string. As such, the input values must be escaped, and the result must be un-escaped to handle XML within XML.

For example, if we want to specific the following string as the value for inputXMLRequest:

```
<pciserver_requests xmlns="http://www.pciwiz.com/PCiServer">
  <authentication>
    <institution_id>12345678901</institution_id>
    <vendor_id>demo</vendor_id>
    <username>demo</username>
    <password>demoPassword!</password>
  </authentication>
  <services>
    <geocoder_service>
      <settings>
        <geocoding_year>2018</geocoding_year>
        <standardize_flag>1</standardize_flag>
        <aggressive_mode>0</aggressive_mode>
        <match_flag>1</match_flag>
        <tract_match_flag>1</tract_match_flag>
        <zip4_flag>1</zip4_flag>
        <zip2_flag>1</zip2_flag>
        <zip_percent>1</zip_percent>
        <centroid_flag>0</centroid_flag>
      </settings>
    </geocoder_service>
  </services>
  <request>
    <request_id>1</request_id>
    <loan_information>
      <application_number>12345678901234567890123</application_number>
    </loan_information>
    <property_location>
      <address_1>30 Winter St</address_1>
      <address_2></address_2>
      <city>Waltham</city>
      <state>MA</state>
      <zip>02453</zip>
      <zip4 />
    </property_location>
    <underwriting_information>
      <applicant_income>85</applicant_income>
    </underwriting_information>
  </request>
</pciserver_requests>
```

It should be escaped so that the value can be specified in XML as valid string:

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The full SOAP request would be like this:

```
POST /k2webservice/k2webservice.asmx HTTP/1.1
Host: www.wizenterprise.com
Content-Type: text/xml; charset=utf-8
Content-Length: 1839
SOAPAction: "http://www.pciwiz.com/k2server/SubmitBatchRequest"

<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
<soap:Body>
<SubmitBatchRequest xmlns="http://www.pciwiz.com/k2server">
<inputXmlRequest>

<pciserver_requests xmlns="http://www.pciwiz.com/PCiServer">
  <authentication>
    <institution_id>12345678901</institution_id>
    <vendor_id>demo</vendor_id>
    <username>demo</username>
    <password>demoPassword!</password>
  </authentication>
  <services>
    <geocoder_service>
      <settings>
        <geocoding_year>2018</geocoding_year>
        <standardize_flag>1</standardize_flag>
        <aggressive_mode>0</aggressive_mode>
        <match_flag>1</match_flag>
        <tract_match_flag>1</tract_match_flag>
        <zip4_flag>1</zip4_flag>
        <zip2_flag>1</zip2_flag>
        <zip_percent>1</zip_percent>
        <centroid_flag>0</centroid_flag>
      </settings>
    </geocoder_service>
  </services>
  <request>
    <request_id>1</request_id>
    <loan_information>
      <uli>123456789012345678901234567890123456789012300</uli>
      <lei>12345678901234567890</lei>
      <application_number>12345678901234567890123</application_number>
    </loan_information>
    <property_location>
      <address_1>130 Turner St</address_1>
      <address_2 />
      <city>Waltham</city>
      <state>MA</state>
      <zip>02453</zip>
      <zip4 />
    </property_location>
    <underwriting_information>
      <applicant_income>85</applicant_income>
    </underwriting_information>
  </request>

```


Consumer Compliance Solutions
</pciserver_requests>

```
</inputXmlRequest>  
<requestFormat> </requestFormat>  
</SubmitBatchRequest>  
</soap:Body>  
</soap:Envelope>
```

The following .Net Framework API (C#) can be used to convert a plain, non-escaped XML string into an escaped XML string:

```
System.Security.SecurityElement.Escape(string unEscapedXML)
```

Conversely, the value of <SubmitRequestResult> or <SubmitBatchRequestResult> are returned as escaped XML string that must be un-escaped before using with any XML engine.

The following simple function (C#) can be used to un-escape the XML string:

```
string UnescapeXML(string escapedXML)  
{  
    if (string.IsNullOrEmpty(escapedXML))  
        return escapedXML;  
  
    string unescapedXML = escapedXML;  
    unescapedXML = unescapedXML.Replace("&apos;", "'");  
    unescapedXML = unescapedXML.Replace("&quot;", "\"");  
    unescapedXML = unescapedXML.Replace("&gt;", ">");  
    unescapedXML = unescapedXML.Replace("&lt;", "<");  
    unescapedXML = unescapedXML.Replace("&amp;", "&");  
  
    return unescapedXML;  
}
```

NOTE:

Please make sure to use appropriate URL for testing and validation SOAP services. For example, if you are testing against client test environment, only the HTTPS protocol can be used:

<https://ct.wizenterprise.com/k2webservice/k2webservice.asmx>

**Please contact Andrew Sheeran at Andrew.Sheeran@wolterskluwer.com for test credentials. **

3.1 XML Schema

The schema for XML requests to the HMDA Wiz Web Services is defined in PCiRequest.XSD. The XML documents discussed in this section describe the attributes and elements along with their respective data types and values.

4. Geocoding

The Geocoding Service processes the street address of the loan record and calculates the geographic attributes of the address as well as demographic information for the area where the address is located.

Geographic information returned:

Latitude, Longitude, State FIPS code, MSA, County FIPS Code, Census Tract

Sample Geocoding XML Request:

```
<pciserver_requests xmlns="http://www.pciwiz.com/PCiServer">
  <authentication>
    <institution_id></institution_id>
    <vendor_id></vendor_id>
    <username></username>
    <password></password>
  </authentication>
  <services>
  <geocoder_service>
  <settings>
    <geocoding_year>2018</geocoding_year>
    <standardize_flag>1</standardize_flag>
    <aggressive_mode>0</aggressive_mode>
    <match_flag>1</match_flag>
    <tract_match_flag>1</tract_match_flag>
    <zip4_flag>1</zip4_flag>
    <zip2_flag>1</zip2_flag>
    <zip_percent>1</zip_percent>
    <centroid_flag>0</centroid_flag>
  </settings>
  </geocoder_service>
  </services>
  <request>
  <request_id>1</request_id>
  <loan_information>
    <application_number>12345678901234567890123</application_number>
  </loan_information>
  <property_location>
    <address_1>100 Tremont St</address_1>
    <address_2 />
    <city>Boston</city>
    <state>MA</state>
    <zip>02108</zip>
    <zip4/>
  </property_location>
  <underwriting_information>
    <applicant_income>85</applicant_income>
  </underwriting_information>
  </request>
</pciserver_requests>
```

Sample Geocoding Response XML (Single Request)

```
<pci_responses>
  <geocoder_service>
  <response>
  <demographic_vars>
```

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```
<percent_minority>47.28</percent_minority>
<percent_asian>26.33</percent_asian>
<percent_black>23.52</percent_black>
<percent_hispanic>45.22</percent_hispanic>
<middle_income_families>32</middle_income_families>
<rental_units>1140</rental_units>
<borrower_income_level>0</borrower_income_level>
<msa_median>63577</msa_median>
<condo_units>0</condo_units>
<hud_median>74053</hud_median>
<minority_count>1504</minority_count>
<families_percent_total_households>29.55</families_percent_total_households>
<percent_middle_income_families>7.31</percent_middle_income_families>
<median_family_income_proj>26162</median_family_income_proj>
<low_income_families>253</low_income_families>
<median_family_income>21875</median_family_income>
<tract_income_category>1</tract_income_category>
<central_city>1</central_city>
<percent_moderate_income_families>12.10</percent_moderate_income_families>
<median_household_income>17639</median_household_income>
<owner_occ_units>372</owner_occ_units>
<percent_upper_income_families>22.83</percent_upper_income_families>
<moderate_income_families>53</moderate_income_families>
<percent_low_income_families>57.76</percent_low_income_families>
<percent_families_below_poverty_level>20.32</percent_families_below_poverty_level>
<borrower_income_category>5</borrower_income_category>
<upper_income_families>100</upper_income_families>
<rental_occ_units>1079</rental_occ_units>
<tract_income_level>34.41</tract_income_level>
<families_below_poverty_level>89</families_below_poverty_level>
<single_to_4_family_units>8</single_to_4_family_units>
</demographic_vars>
<matched_address>
  <address_1>30 WINTER ST</address_1>
  <address_2></address_2>
  <zip>02108</zip>
  <state>MA</state>
  <city>BOSTON</city>
  <zip4></zip4>
</matched_address>
<census_info>
  <state>25</state>
  <msa>14484</msa>
  <county>025</county>
  <census_tract>0701.00</census_tract>
  <county_5>25025</county_5>
  <tract_11>25025070100</tract_11>
  <longitude>-71.06129</longitude>
  <latitude>42.355845</latitude></census_info>
<input_address>
  <city>Boston</city>
  <zip4></zip4>
  <zip>02108</zip>
  <state>MA</state>
  <address_1>30 Winter Street</address_1>
  <address_2></address_2>
</input_address>
```

Consumer Compliance Solutions

```
<standardized_address>
  <zip4></zip4>
  <state></state>
  <city></city>
  <address_1></address_1>
  <address_2></address_2>
  <zip></zip>
</standardized_address>
<status>
<centroid_status>0</centroid_status>
<match_status>B1</match_status>
<match_description>Street segment match</match_description>
<centroid_description>No match at centroid level or not apply (Matched to a
  street)</centroid_description>
</status>
<income>0</income>
<uli>123456789012345678901234567890123456789012300</uli>
<lei>12345678901234567890</lei>
<application_number>12345678901234567890123</application_number>
<request_id>1</request_id>
</response>
</geocoder_service>
</pci_responses>
```

4.1 Authentication Information: <authentication> Element

Each geocoding request must include authentication information. Authentication information for each of the elements below will be provided by Wolters Kluwer during time of implementation.

<u><authentication> Element</u>	
Child Element	Description
institution_id	Identifies the institution
vendor_id	Identifies the vendor
username	Username for this request
password	Password for this request

4.2 Strictness and Fall-back Information: <settings> Element

This element specifies the level of strictness the geocoder should adhere to when searching for a match. If an address is unable to be geocoded with a street level match, it is possible to apply additional logic to maximize the number of records that can be geocoded. The following elements describe possible values as well as Wolters Kluwer's recommended settings for 'compliance grade' geocoding.

<u><settings> Element</u>	
Child Element	Description
aggressive_mode	Specifies the level of geocoding strictness. The following levels of strictness are supported: Lenient: Returns a match when the house number and side of the street match properly to the Geocoder's reference addresses.

	<p>Moderate: Returns a match only when the house number and street direction; or house number, side of the street and street type match properly to the Geocoder's reference addresses.</p> <p>Strict: Returns a match only when the house number, side of the street, street type, street direction and Zip Code match properly to the Geocoder's reference addresses.</p> <p>Possible values are: 0 = Lenient 1 = Moderate (Recommended) 2 = Strict</p>
match_flag	<p>Specifies whether parcel and street-level matching logic is used, where an address is matched to latitude/longitude coordinates. <u>Parcel and Street-level matching are always recommended.</u></p> <p>Possible values are: 1 = Parcel & Street-level matching is used (Recommended) 0 = Parcel & Street-level matching is not used</p>
standardize_flag	<p>Specifies whether standardization is used on addresses that are not correctly entered. Standardization is always recommended because of its ability to rectify addresses that are invalid by fixing spelling errors, correcting zip codes, etc.</p> <p>Possible values are: 1 = Standardization is used. (Recommended) 0 = Standardization is not used.</p>
tract_match_flag	<p>Specifies if the Fall Back to Tract fall-back method is used. Fall Back To Tract matching applies to records whose address number could not be matched, but if the street itself falls entirely into one census tract, the record will be matched to that tract.</p> <p>Possible values are: 1 = Fall back to tract is used (Recommended) 0 = Fall back to tract is not used</p>
zip4_flag	<p>Specifies whether the ZIP+4 fall-back method is used. The address is matched to the appended ZIP+4 portion of the Zip Code. ZIP+4 matches are no larger than one side of one city block.</p> <p>Possible values are: 1 = ZIP+4 fall-back method is used (Recommended) 0 = ZIP+4 fall-back method is not used.</p>

zip2_flag	<p>Specifies whether the ZIP+2 fall-back method is used. The address is matched to the first two digits of the appended ZIP+4 portion of the ZIP code. ZIP+2 matches are no larger than a few city blocks.</p> <p>Possible values are: 1 = ZIP+2 fall-back method is used 0 = ZIP+2 fall-back method is not used (Recommended)</p>
zip_percent	<p>Specifies if the Zip Percent fall-back method is used. This fall-back method allows you to match records to a Zip Code only if a specified percentage of that Zip Code falls within a single census tract. You can specify that 90%, 95%, or 99% of a Zip Code must fall within a single census tract in order to be matched to that tract.</p> <p>Possible values are: 0 = If 90% of a Zip Code falls within a census tract, the address will match to that census tract 1 = If 95% of a Zip Code falls within a census tract, the address will match to that census tract (Recommended) 2 = 99% of a Zip Code falls within a census tract, the address will match to that census tract -1 = Zip Percent fall back method is not used</p>
centroid_flag	<p>Specifies whether the ZIP Centroid fall-back method is used. ZIP centroiding matches to the geographic center of the 5-digit Zip Code.</p> <p>Possible values are: 1 = ZIP Centroid fall-back method is used 0 = ZIP Centroid fall-back method is not used (Recommended)</p>
geocoding_year	<p>The year provided should match that of the Action Date of the application. This setting has implications for geographic and demographic data associated with the geocode.</p> <p>For example: Geocoding years prior to 2012 will utilize Census 2000 information to geocode the record. Geocoding years 2012 and later will utilize Census 2010 information to geocode the record.</p>
AllowWeakParcelTractMatch	<p>Optional setting that allows users to configure the geocoder to return Weak Parcel and Tract matches. When the option is enabled, the geocoder will return a B1 parcel match when the gsLocationCode is returned as AP22, AP23, or AP24 and a B8 tract match when the gsLocationcode is returned as ZB9A, ZB9B, ZB9C, ZT9A, ZT9B, ZT9C, ZB7A, ZB7B, ZB7C, ZT7A, ZT7B, or ZT7C.</p>

Possible values are: 1 = Weak Parcel and Tract Matches are allowed 0 = Weak Parcel and Tract Matches are not allowed (Recommended)

4.3 Address Information: <property_location> Element

This element captures the address of the loan record. The Geocode Service will return geographic and demographic information for *this* address.

<property_location> Element	
Child Element	Description
address_1	First address line
address_2	Second address line
city	City
state	State
zip	First 5 digits in Zip Code
zip4	Last 4 digits in Zip Code

4.4 Demographic Information: <demographic_vars> Element

The source for the demographic variables is the US Census database.

<demographic_vars> Element	
Child Element	Description
request_id	The unique ID provided in the request XML file.
uli	Universal Loan Identifier - The internal application number provided in the XML
application_number	The application number provided in the request XML
Income	The income value provided in the request XML file.
match_status	Match status codes are assigned when a match is found or when a match fails.
match_description	A description for the meaning of the returned match_status code.
centroid_status	Centroid status codes are assigned when a match is found or when a match fails.
centroid_description	A description for the meaning of the returned centroid_status code.
input_address	Returns the address from the input XML file. XML elements returned: address_1, address_2, city, state, zip, zip4.
standardized_address	Returns the "standardized" address, if the standardization flag is set to true in the request XML. XML elements returned: address_1, address_2, city, state, zip, zip4.

matched_address	Returns the address the <i>Wiz</i> Geocoder used to match the record. XML elements returned: address_1, address_2, city, state, zip, zip4.
MSA	The four-digit MSA code to which the address was matched.
State	The two-digit state code to which the address was matched.
County	The three-digit county code to which the address was matched.
census_tract	The census tract to which the address was matched.
Latitude	The latitude to which the address was matched.
Longitude	The longitude to which the address was matched.
tract_income_level	<p>Tract median family income as a percent of the MSA median family income.</p> <p>Values returned are: 0 = NA > 0% - < 50% Low income 50% - < 80% Moderate income 80% - < 120% Middle income >= 120% Upper income</p>
tract_income_category	<p>Tract income category for a census tract based on the tract_income_level.</p> <p>Values returned are: 1 = Low 2 = Moderate 3 = Middle 4 = Upper 5 = NA</p>
borrower_income_level	<p>Borrower/Applicant income as a percent of the MSA HUD median income. ("Applicant Income" information is required to calculate this.)</p> <p>Values returned are: > 0% - < 50% Low income 50% - < 80% Moderate income 80% - < 120% Middle income >= 120% Upper income 0 = Income is blank</p>

borrower_income_category	<p>Applicant income category for a borrower/applicant based on the borrower_income_level. (Need "Applicant Income" value to calculate)</p> <p>Values returned are: 1 = Low Income 2 = Moderate Income 3 = Middle Income 4 = Upper Income 5 = Income is blank</p>
hud_median	The MSA/Non-MSA HUD updated median income.
msa_median	The MSA/Non-MSA US Census Bureau median income.
median_family_income	The US Census Bureau median family income for the census tract to which an address is matched.
median_family_income_proj	The FFIEC's Updated Median Family Income number
median_household_income	The US Census Bureau median household income for the census tract to which an address is matched.
minority_count	Count of minority persons living in a census tract to which an address is matched.
percent_minority	Percentage of minority persons living in a census tract to which an address is matched.
percent_asian	Percentage of asian persons living in a census tract to which an address is matched.
percent_black	Percentage of black persons living in a census tract to which an address is matched.
percent_hispanic	Percentage of hispanic persons living in a census tract to which an address is matched.
central_city	<p>An indicator for whether an address is located in or near a central city as defined by the US Census. Values returned are: 0 = Not located in or near a central city 1 = Located in or near a central city</p>
low_income_families	Count of low-income families living in a census tract to which an address is matched.
moderate_income_families	Count of moderate-income families living in a census tract to which an address is matched.
middle_income_families	Count of middle-income families living in a census tract to which an address is matched.
upper_income_families	Count of upper income families living in a census tract to which an address is matched.

percent_low_income_families	Percentage of low-income families per total families living in a census tract to which an address is matched.
percent_moderate_income_families	Percentage of moderate-income families per total families living in a census tract to which an address is matched.
percent_middle_income_families	Percentage of middle-income families per total families living in a census tract to which an address is matched.
percent_upper_income_families	Percentage of upper income families per total families living in a census tract to which an address is matched.
families_percent_total We have provided all these values at the National Level	Percentage of families per total households living in a census tract to which an address is matched.
families_below_poverty_level	Count of families below poverty level living in a census tract to which an address is matched.
percent_families_below_poverty_level	Percentage of families below poverty level per total families living in a census tract to which an address is matched.
rental_units	Count of rental units in a census tract to which an address is matched.
condo_units	Count of condo units in a census tract to which an address is matched.
owner_occ_units	Count of owner-occupied units in a census tract to which an address is matched.
rental_occ_units	Count of rental occupied units in a census tract to which an address is matched.
single_to_4_family_units	Count of single to 4-family units in a census tract to which an address is matched.

4.5 Matched Address Information: <matched_address> Element

The <matched_address> element returns the address that HMDA *Wiz* matched the record to during the geocoding process.

<matched_address> Element	
Child Element	Description
address_1	First address line
address_2	Second address line
city	City
state	State
Zip	First 5 digits of Zip Code
Zip4	Last 4 digits of Zip Code

4.6 Geocoding Information: <census_info> Element

The <census_info> element contains census tract, MSA, County and State FIPS codes.

<census_info> Element	
Child Element	Description
msa	The five-digit MSA code to which the address was matched.
state	The two-digit state code to which the address was matched.
county	The three-digit county code to which the address was matched.
census_tract	The census tract to which the address was matched.
county_5	The five-digit county code to which the address was matched.
tract_11	The 11-digit census tract to which the address was matched.
Latitude	Latitude of address
Longitude	Longitude of address

4.7 Input Address Information: <input_address> Element

The <input_address> element returns the record's original address from the XML request.

<input_address> Element	
Child Element	Description
address_1	First address line
address_2	Second address line
city	City
state	State
zip	First 5 digits in Zip Code
zip4	Last 4 digits in Zip Code

4.8 Standardized Address Information: <standardized_address> Element

The United States Postal System maintains an address database and a set of guidelines for address formatting. When the HMDA Wiz Geocoder processes records, one of the steps involves normalizing the input address based on the USPS standards and applying a ZIP4 (if one is not present). In a subsequent pass, the Geocoder looks to match the input address to an address in the USPS database. When it makes a match, information for the standardized address is displayed in the <standardized_address> element.

<standardized_address> Element	
Child Element	Description
address_1	First address line
address_2	Second address line
city	City
state	State
zip	First 5 digits in Zip Code

4.9 Match Status Information: <status> Element

The <status> element contains information about logic used to geocode the record - including whether or not the record was able to successfully geocode or not.

<u><status> Element</u>		
Child Element	Description	
match_status	B1	The address entered received best match from the Point/Parcel database.
	B2	The address entered received best match from the Street Address database.
	B3	The addresses entered received an intersection match to the “to” end of first-named street.
	B5	The address entered matched to an alternate name for the street.
	B6	The location of this address is known but has not been added to the Point/Parcel database. The address entered matched to a temporary placeholder from Point/Parcel Database
	B7	The location of this address is known but has not been added to the Address database. The address entered matched to a temporary placeholder from Address Database
	B8	The street name entered is correct, but the street number is not within the correct range for this street. Because the entire street is contained within a single census tract, the address entered was matched to that tract.
	B9	The street name entered is correct, but the street number is not within the correct range for this street. Because the entire street is contained within a single census tract, the address entered was matched to that tract.
	10	The state abbreviation entered is incorrect. This address cannot be geocoded.

	11	The city name entered does not exist in the state that you entered. This address cannot be geocoded.
	12	The street address entered is incomplete or incorrectly formatted. This address cannot be geocoded.
	13	You are not licensed to geocode in the state that you entered. Please review your license agreement to determine which geographies your license covers.
	14	The street name entered does not exist in the city that you entered. This address cannot be geocoded.
	15	The street name entered is correct, but the street number is not within the correct range for this street. This address cannot be geocoded.
	16	There is more than one street segment with the given address number. This address cannot be geocoded.
	17	This address contains two valid streets that do not intersect. This address cannot be geocoded.
	18	The city name entered is not covered by Wolters Kluwer databases.
centroid_status	2	The address entered matched to the center of the geographic area covered by the ZIP+2 portion of the 4-digit extension of the
	4	The address entered matched to the center of the geographic area covered by the 4-digit extension of the ZIP Code.
	5	The address entered matched to the center of the geographic area covered by the 5-digit ZIP Code.
	A	The address entered matched to a census tract that contains at least 99% of the ZIP code.
	B	The address entered matched to a census tract that contains at least 95% of the ZIP code.
	C	The address entered matched to a census tract that contains at least 90% of the ZIP code.
	0	Match failed.

5. Edit Check

The Edit Check Service compares data in the loan record to the CFPB HMDA DF requirements and regulations. If there are errors found, the XML response file will return CFPB edit codes and edit descriptions identifying the troublesome data.

Year Specific Edit Checks

The HMDA Wiz application has been updated to allow a specific activity year's version of edit codes and description to be requested for HMDA DF files. When sending an edit check request via XML, use the `<edit_check_year>` element to specify which activity year's edits should be run against the file. This functionality is available only for HMDA DF files and activity years 2018 and later.

For example, to request the Activity Year 2019 version of CFPB edits, set the value of the `<edit_check_year>` element to 2019. This will result in the file being compared to the 2019 requirements and the 2019 version of edit codes and descriptions to be returned in the response message.

```
<services>
  <lar_service>
    <settings>
      <edit_check_year>2019</edit_check_year>
      <lar_type>hmdf</lar_type>
      <lar_action>editcheck</lar_action>
    </settings>
  </lar_service>
</services>
```

Sample Edit Check XML Request

```
<pciserver_requests xmlns="http://www.pciwiz.com/PCiServer">
  <authentication>
    <institution_id></institution_id>
    <vendor_id></vendor_id>
    <username></username>
    <password></password>
  </authentication>
  <services>
    <lar_service>
      <settings>
        <edit_check_year>2018</edit_check_year>
        <lar_type>hmdf</lar_type>
        <lar_action>editcheck</lar_action>
      </settings>
    </lar_service>
  </services>
  <request>
    <request_id>1</request_id>
    <loan_identifier_information>
      <uli>123456789012345678901234567890123456789012300</uli>
```

Consumer Compliance Solutions

```
<lei>12345678901234567890</lei>
<application_number>12345678901234567890123</application_number>
<mortgage_loan_origination_NMLSR_id>123450</mortgage_loan_origination_NMLSR_id>
</loan_identifier_information>
<loan_information>
  <is_exempt>false</is_exempt>
  <application_date>2018-03-27</application_date>
  <loan_type>1</loan_type>
  <property_type>1</property_type>
  <loan_purpose>1</loan_purpose>
  <occupancy>2</occupancy>
  <loan_amount_dollars>250000</loan_amount_dollars>
<hoepa_status>2</hoepa_status>
  <lien_status>1</lien_status>
<prepayment_penalty_term>24</prepayment_penalty_term>
<loan_term_months>360</loan_term_months>
<loan_term></loan_term>
<introductory_rate_period>24</introductory_rate_period>
<balloon_payment>2</balloon_payment>
<interest_only_payment>2</interest_only_payment>
<negative_amortization>2</negative_amortization>
<other_non_amortizing>2</other_non_amortizing>
<application_method>1</application_method>
<initially_payable_to_your_institution>1</initially_payable_to_your_institution>
<reverse_mortgage>2</reverse_mortgage>
<open_end_line_of_credit>2</open_end_line_of_credit>
<business_commercial_purpose>2</business_commercial_purpose>
  <preapproval_request>2</preapproval_request>
  <agency_code>3</agency_code>
</loan_information>
<action>
  <action_taken>1</action_taken>
  <action_date>2018-03-30</action_date>
</action>
<property_location>
  <address_1>30 Winter Street</address_1>
  <address_2></address_2>
  <city>Boston</city>
  <state>MA</state>
  <zip>02108</zip>
  <zip4></zip4>
</property_location>
< census_info>
  <msa>14454</msa>
  <state_fips>25</state_fips>
  <county_fips>025</county_fips>
  <census_tract>0701.01</census_tract>
</census_info>
<applicant_info>
  <ethnicity_1>2</ethnicity_1>
  <ethnicity_2></ethnicity_2>
<ethnicity_3></ethnicity_3>
<ethnicity_4></ethnicity_4>
<ethnicity_5></ethnicity_5>
<ethnicity_other></ethnicity_other>
<ethnicity_determinant>2</ethnicity_determinant>
  <race_1>4</race_1>
```

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```
<race_2></race_2>
<race_3></race_3>
<race_4></race_4>
<race_5></race_5>
<race1_other></race1_other>
<race27_other></race27_other>
<race44_other></race44_other>
<race_determinant>2</race_determinant>
  <sex>1</sex>
<sex_determinant>2</sex_determinant>
<age>27</age>
</applicant_info>
<co_applicant_info>
  <no_coapplicant>1</no_coapplicant>
  <coapplicant_ethnicity_1>5</coapplicant_ethnicity_1>
<coapplicant_ethnicity_2></coapplicant_ethnicity_2>
<coapplicant_ethnicity_3></coapplicant_ethnicity_3>
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<coapplicant_ethnicity_5></coapplicant_ethnicity_5>
<coapplicant_ethnicity_other></coapplicant_ethnicity_other>
<coapplicant_ethnicity_determinant>4</coapplicant_ethnicity_determinant>
  <coapplicant_race_1>8</coapplicant_race_1>
  <coapplicant_race_2></coapplicant_race_2>
  <coapplicant_race_3></coapplicant_race_3>
  <coapplicant_race_4></coapplicant_race_4>
  <coapplicant_race_5></coapplicant_race_5>
  <coapplicant_race1_other></coapplicant_race1_other>
<coapplicant_race27_other></coapplicant_race27_other>
<coapplicant_race44_other></coapplicant_race44_other>
<coapplicant_race_determinant>4</coapplicant_race_determinant>
<coapplicant_sex>5</coapplicant_sex>
<coapplicant_sex_determinant>4</coapplicant_sex_determinant>
<coapplicant_age>9999</coapplicant_age>
</co_applicant_info>
<underwriting_information>
  <applicant_income>780</applicant_income>
<credit_score>775</credit_score>
<credit_model>1</credit_model>
<credit_model_other></credit_model_other>
<coapplicant_credit_score>9999</coapplicant_credit_score>
<coapplicant_credit_model></coapplicant_credit_model>
<coapplicant_credit_model_other></coapplicant_credit_model_other>
<debt_to_income>23.55</debt_to_income>
<combined_loan_to_value>23.55</combined_loan_to_value>
<automated_underwriting_system_1>1</automated_underwriting_system_1>
<automated_underwriting_system_2>2</automated_underwriting_system_2>
<automated_underwriting_system_3>3</automated_underwriting_system_3>
<automated_underwriting_system_4>4</automated_underwriting_system_4>
<automated_underwriting_system_5>5</automated_underwriting_system_5>
<automated_underwriting_system_other></automated_underwriting_system_other>
<automated_underwriting_system_result_1>1</automated_underwriting_system_result_1>
<automated_underwriting_system_result_2>2</automated_underwriting_system_result_2>
<automated_underwriting_system_result_3>3</automated_underwriting_system_result_3>
<automated_underwriting_system_result_4>4</automated_underwriting_system_result_4>
<automated_underwriting_system_result_5>5</automated_underwriting_system_result_5>
<automated_underwriting_system_result_other></automated_underwriting_system_result_other>
</underwriting_information>
```


Consumer Compliance Solutions

```
<purchaser_type>
  <purchaser>0</purchaser>
</purchaser_type>
<property_information>
<construction_method>1</construction_method>
  <occupancy_type>1</occupancy_type>
<property_value>350500</property_value>
<manufactured_home_secured_property_type>3</manufactured_home_secured_property_type>
<manufactured_home_land_property_interest>5</manufactured_home_land_property_interest>
<total_units>5</total_units>
<multifamily_affordable_units>0</multifamily_affordable_units>
<rent></rent>
<no_of_bedroom></no_of_bedroom>
</property_information>
<denial_reasons>
  <denial_reason_1></denial_reason_1>
  <denial_reason_2></denial_reason_2>
  <denial_reason_3></denial_reason_3>
  <denial_reason_4></denial_reason_4>
  <denial_reason_other></denial_reason_other>
</denial_reasons>
<pricing_data>
  <rate_spread>NA</rate_spread>
<total_loan_costs>2399.04</total_loan_costs>
<total_points_and_fees>2399.04</total_points_and_fees>
<origination_fees>2399.04</origination_fees>
<discount_points>2399.04</discount_points>
<lender_credits>2399.04</lender_credits>
<interest_rate>04.125</interest_rate>
  <rate_spread_input></rate_spread_input>
  <rate_type>2</rate_type>
  <var_term>10</var_term>
  <rate_lock_date>2018-01-16</rate_lock_date>
  <apr>8.234</apr>
  <maturity_date>2022-01-16</maturity_date>
</pricing_data>
</request>
</pciserver_requests>
```

5.1 Loan Identifier Information: <loan_identifier_information> Element

This element provides loan identifier information.

<loan_identifier_information> Element	
Child Element	Description

uli	<p>Universal Loan Identifier (ULI) - 20 characters FI LEI (published by ISO) + 23 characters (letters, # or combination) generated by FI + 2 digit check digit calculated off of the previous values (not exceeding 45 characters)</p> <p>Only use if check digit provided.</p> <p>Example: 123456789123456789123456789123456700</p>
lei	<p>Legal Entity Identifier (LEI) assigned to filing institution (not exceeding 20 characters).</p>
application_number	<p>Enter an identifying loan number that can be used later to retrieve the loan or application file. It can be any number of your institution's choosing (not exceeding 23 characters). Application number can contain both letters, numbers and a combination of both.</p> <p>Use if check digit is NOT provided for ULI</p>
mortgage_loan_origination_NMLSR_id	<p>Enter the Nationwide Mortgage Licensing System and Registry mortgage loan originator unique identifier (NMLSR ID) for the mortgage loan originator.</p> <p>Example: If the NMLSR ID for the mortgage loan originator is 123450, enter 123450</p> <p>a. Enter "NA" if the requirement to report Mortgage Loan Originator NMLSR Identifier is not applicable to the covered loan or application that your institution is reporting.</p>

5.2 Loan Information: <loan_information> Element

This element provides general loan information.

<loan_information> Element	
Child Element	Description
is_exempt	<p>S. 2155 - Exemption support was implemented to consume default values (Exempt or 1111) for exemption fields base on the Economic Growth, Regulatory Relief, and Consumer Protection Act (the Economic Growth Act).</p> <p>The following web services have compliance updates; compliance:</p> <ul style="list-style-type: none"> • Edit Check • Insert/Update

	<ul style="list-style-type: none"> • Report • Submission Services <p>These services were modified to include an is_exempt tag (optional) at the record level.</p> <p>Note: These changes apply to only the HMDF lar_type.</p> <p><u>Enter “true” for Exempt Record</u></p> <p>Partial exemption will be handled within HMDA Wiz under Admin > Institution Settings. Please see HMDA Wiz help documentation for details.</p> <p>Note: Tag not provided but exempt columns with exempt values will be treated as exempt record.</p>
application_date	<p>The date the loan application was received by your institution by month, day, and year. If your institution normally records the date shown on the application form you may use that date instead.</p> <p>Enter “NA” for loans purchased by your institution.</p> <p>Format: MM/DD/YYYY or YYYY-MM-DD (Example: May 24, 2018 would be represented as 05/24/2018 or 2018-05-24 on tags)</p>
loan_type	<p>The type loan of loan or application:</p> <ul style="list-style-type: none"> 1 = Conventional (any loan other than FHA, VA, FSA, or RHS loans) 2 = FHA-insured (Federal Housing Administration) 3 = VA-guaranteed (Veterans Administration) 4 = FSA/RHS-guaranteed (Farm Service Agency or Rural Housing Service)
loan_purpose	<p>Purpose of the loan:</p> <ul style="list-style-type: none"> 1 = Home purchase 2 = Home improvement 31 = Refinancing 32 = Cash-out Refinance 4 = Other 5 = Not applicable <p>Do not report a refinancing if, under the loan agreement, you were unconditionally obligated to refinance the obligation, or you were obligated to refinance the obligation subject to conditions within the borrower’s control.</p>

	<p>Show the dollar amount For example, If the loan amount is \$110,500, enter 110500.</p> <p>For a home purchase loan that you originated, enter the principal amount of the loan. For a home purchase loan that you purchased, enter the unpaid principal balance of the loan at the time of purchase. c. For a home improvement loan, enter the entire amount of the loan—including unpaid finance charges if that is how such loans are recorded on your books— even if only a part of the proceeds is intended for home improvement. If you opt to report home-equity lines of credit, report only the portion of the line intended for home improvement or home purchase. For refinancings, indicate the total amount of the refinancing, including both the amount outstanding on the original loan and any amount of “new money.” For a loan application that was denied or withdrawn, enter the amount applied for. If an applicant accepts a counteroffer for an amount different from the amount for which the applicant applied, the financial institution reports the amount granted. If an applicant does not accept a counteroffer or fails to respond, the institution reports the amount initially requested.</p>
loan_amount_dollars	
preapproval_request	<p>Whether the application or loan involved a request for a preapproval of a home purchase loan: 1 = Preapproval requested 2 = Preapproval not requested Enter Code 2 if your institution has a covered preapproval program but the applicant does not request a preapproval.</p>
loan_term_months	<p>Enter, in numeral form, the number of months after which the legal obligation will mature or terminate or would have matured or terminated.</p> <p>Example: If the loan term is 360 months, enter 360</p> <p>Enter “NA” if the requirement to report loan term does not apply to the covered loan or application that your institution is reporting.</p> <p>Note: If Wiz is calculating Rate Spread, Loan Term is required in “Years”. See loan_term</p>
loan_term	<p>The loan term in number of years for rate spread calculation. Optional field if calculating rate spread outside of Wiz. Minimum value = 1, Maximum value = 40</p>

<p>negative_amortization</p>	<p>Indicate whether the contractual terms include, or would have included, a term that would cause the covered loan to be a negative amortization loan by entering the applicable Code from the following:</p> <p>1 = Negative amortization 2 = No negative amortization</p>
<p>other_non_amortizing</p>	<p>Indicate whether the contractual terms include, or would have included, any term, other than those described that would allow for payments other than fully amortizing payments during the loan term by entering the applicable Code from the following:</p> <p>1 = Other non-fully amortizing features 2 = No other non-fully amortizing features</p>
<p>application_method</p>	<p>Submission of Application. Indicate whether the applicant or borrower submitted the application directly to your institution by entering the applicable Code from the following:</p> <p>1 = Submitted directly to your institution 2 = Not submitted directly to your institution 3 = Not applicable</p> <p>Use Code 3 if the requirement to report whether the applicant or borrower submitted the application directly to your institution does not apply to the covered loan or application that your institution is reporting.</p>
<p>initially_payable_to_your_institution</p>	<p>Initially Payable to Your Institution. Indicate whether the obligation arising from the covered loan was, or, in the case of an application, would have been, initially payable to your institution by entering the applicable Code from the following:</p> <p>1= Initially payable to your institution 2 = Not initially payable to your institution 3 = Not applicable</p> <p>Use Code 3 if the requirement to report whether the obligation arising from the covered loan was, or, in the case of an application, would have been, initially payable to your institution does not apply to the covered loan or application that your institution is reporting.</p>

reverse_mortgage	<p>Indicate whether the covered loan is, or the application is for, a reverse mortgage by entering the applicable Code from the following:</p> <p>1 = Reverse mortgage 2 = Not a reverse mortgage</p>
open_end_line_of_credit	<p>Indicate whether the covered loan is, or the application is for, an open-end line of credit by entering the applicable Code from the following:</p> <p>1 = Open-end line of credit 2 = Not an open-end line of credit</p>
business_commercial_purpose	<p>Indicate whether the covered loan is, or the application is for, a covered loan that will be made, primarily for a business or commercial purpose by entering the applicable Code from the following:</p> <p>1 = Primarily for a business or commercial purpose 2 = Not primarily for a business or commercial purpose</p>
prepayment_penalty_term	<p>Enter, in numeral form, the term, in months, of any prepayment penalty.</p> <p>Example: If a prepayment penalty may be imposed within the first 24 months after closing or account opening, enter 24.</p> <p>Enter “NA” if the requirement to report prepayment penalty term does not apply to the covered loan or application that your institution is reporting.</p>
agency_code	<p>Indicates regulatory agency:</p> <p>1 = OCC 2 = FRB 3 = FDIC 5 = NCUA 6 = HUD 9 = CFPB</p>

5.3 Action Information: <action> Element

This element describes the type of action on the loan as well as the dates of the various actions taken.

<action> Element	
Child Element	Description
action_taken	<p>The type of action:</p> <p>1 = Loan originated 2 = Application approved but not accepted 3 = Application denied 4 = Application withdrawn 5 = File closed for incompleteness</p> <hr/> <p>6 = Loan purchased by your institution 7 = Preapproval request denied 8 = Preapproval request approved but not accepted</p> <p>(Optional reporting) Use Code 1 for a loan that is originated, including one resulting from a request for preapproval. For a counteroffer (your offer to the applicant to make the loan on different terms or in a different amount from the terms or amount applied for), use Code 1 if the applicant accepts. Use Code 3 if the applicant turns down the counteroffer or does not respond.</p> <p>Use Code 2 when the application is approved but the applicant (or the loan broker or correspondent) fails to respond to your notification of approval or your commitment letter within the specified time. Do not use this code for a preapproval request.</p> <p>Use Code 4 only when the application is expressly withdrawn by the applicant before a credit decision is made. Do not use Code 4 if a request for preapproval is withdrawn; preapproval requests that are withdrawn are not reported under HMDA.</p> <p>Use Code 5 if you sent a written notice of incompleteness under section 202.9(c)(2) of Regulation B (Equal Credit Opportunity) and the applicant did not respond to your request for additional information within the period of time specified in your notice. Do not use this code for requests for preapproval that are incomplete; these preapproval requests are not reported under HMDA.</p>
action_date	<p>Date of action.</p> <p>Format: YYYY-MM-DD (Example: May 24, 2018 would be 5/24/2018) For loans originated, enter the settlement or closing date.</p> <p>For loans purchased, enter the date of purchase by your institution.</p>

	<p>For applications and preapprovals denied, applications and preapprovals approved but not accepted by the applicant, and files closed for incompleteness, enter the date that the action was taken by your institution or the date the notice was sent to the applicant.</p>
	<p>For applications withdrawn, enter the date you received the applicant’s express withdrawal, or enter the date shown on the notification from the applicant, in the case of a written withdrawal.</p>
	<p>For preapprovals that lead to a loan origination, enter the date of the origination.</p>

5.4 Property Location Information: <property_location> Element

This element contains information about the property’s address.

<property_location> Element	
Child Element	Description
address_1	First address line
address_2	Second address line
city	City
state	State
zip	First 5 digits in Zip Code
zip4	Last 4 digits in Zip Code

5.5 Property Information: <property_information> Element

This element contains information about the property.

<property_information> Element	
Child Element	Description
construction_method	<p>Indicate the construction method for the dwelling:</p> <ul style="list-style-type: none"> 1 = Site-built 2 = Manufactured home
occupancy_type	<p>Owner Occupancy. Indicate whether the property to which the loan or loan application relates is to be owner-occupied as a principal residence:</p> <ul style="list-style-type: none"> 1 = Principal residence 2 = Second residence 3 = Investment property <p>For purchased loans, use Code 1 unless the loan documents or application indicate that</p>

	<p>the property will not be owner-occupied as a principal residence</p> <p>Use Code 2 for second homes or vacation homes, Use Code 3 for rental properties. If a person purchases a property, does not occupy the property, and generates income by renting the property, the property is an investment property</p>
<p>property_value</p>	<p>Enter, in dollars, the value of the property securing the covered loan or, in the case of an application, proposed to secure the covered loan, relied on in making the credit decision.</p> <p>Example: If the property value is \$350,500, enter 350500</p> <p>Enter “NA” if the requirement to report property value does not apply to the covered loan or application that your institution is reporting.</p>
<p>manufactured_home_secured_property_type</p>	<p>Indicate whether the covered loan or application is, or would have been, secured by a manufactured home and land, or by a manufactured home and not land, by entering the applicable Code from the following:</p> <p>1 = Manufactured home and land 2 = Manufactured home and not land 3 = Not applicable</p> <p>Use Code 3 if the requirement to report manufactured home secured property type does not apply to the covered loan or application that your institution is reporting.</p>

<p>manufactured_home_land_property_interest</p>	<p>Indicate the applicant’s or borrower’s land property interest in the land on which a manufactured home is, or will be, located by entering the applicable code from the following:</p> <ul style="list-style-type: none"> 1 = Direct ownership 2 = Indirect ownership 3 = Paid leasehold 4 = Unpaid leasehold 5 = Not applicable <p>Use Code 5 if the requirement to report manufactured home land property interest does not apply to the covered loan or application that your institution is reporting.</p>
<p>total_units</p>	<p>Enter, in numeral form, the number of individual dwelling units related to the property securing the covered loan or, in the case of an application, proposed to secure the covered loan.</p> <p>Example: If there are five (5) individual dwelling units, enter 5</p>

<p>multifamily_affordable_units</p>	<p>Enter, in numeral form, the number of individual dwelling units related to any multifamily dwelling property securing the covered loan or, in the case of an application, proposed to secure the covered loan, that are income-restricted pursuant to Federal, State, or local affordable housing programs.</p> <p>Example: If there are five (5) multifamily affordable units, enter 5.</p> <p>Enter “0” for a covered loan or application related to a multifamily dwelling that does not contain any such income-restricted individual dwelling units.</p> <p>Enter “NA” if the requirement to report multifamily affordable units does not apply to the covered loan or application that your institution is reporting.</p>
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5.6 Geocoding Information: <census_info> Element

This element contains geographic information about the property address (state and county code, MSA and census tract).

<census_info> Element	
Child Element	Description
msa	Metropolitan Area: the metropolitan area number (provided by the Geocoding Service response).
state_fips	The Federal Information Processing Standard (FIPS) two-digit numerical code for the county (provided by the Geocoding Service response).
county_fips	The Federal Information Processing Standard (FIPS) three-digit numerical code for the county (provided by the Geocoding Service response). Effective November 15th, 2018, 3 or 5 characters values are acceptable in the request files.
census_tract	The census tract where the property is located. Effective November 15th, 2018, 7 or 11 characters values are acceptable in the request files.
county_5	The 5-digit numerical code for the county (provided by the Geocoding Service response).

tract_11	The 11-digit numerical code for the census tract where the property is located. (provided by the Geocoding Service response)
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5.7 Applicant Information: <applicant_info> Element

This element contains information about applicant income, ethnicity, race and sex.

<applicant_info> Element	
Child Element	Description
ethnicity_1	<p>Ethnicity of applicant.</p> <p>1 = Hispanic or Latino 11 = Mexican 12 = Puerto Rican 13 = Cuban 14 = Other H or L 2 = Not Hispanic or Latino 3 = Information not provided by applicant in mail, Internet, or telephone application 4 = NA 5 = No co-applicant</p> <p>Use Code 4 (not applicable) only when the applicant or co-applicant is not a natural person or when applicant or co-applicant information is unavailable because the loan has been purchased by your institution.</p> <p>If there are no co-applicants, use Code 5 for coapplicant_ethnicity_1.</p>
ethnicity_2	See ethnicity_1
ethnicity_3	See ethnicity_1
ethnicity_4	See ethnicity_1
ethnicity_5	See ethnicity_1
ethnicity_other	If 14 = Other H or L used then Other Hispanic or Latino Text of Applicant or Borrower - Free form text up to 100 characters else leave blank
ethnicity_determinant	<p>Determinant for Ethnicity of Applicant/Borrower</p> <p>1 = collected on basis of visual observation or surname 2 = not collected on basis of visual observation or surname 3 = NA</p>

<p>race_1</p>	<p>Race of applicant. 1 = Amer Indian/Alaskan 2 = Asian 21 = Asian Indian 22 = Chinese 23 = Filipino 24 = Japanese 25 = Korean 26 = Vietnamese 27 = Other Asian 3 = Black or African American 4 = Native Hawaiian or Other Pacific Islander 41 = Native Hawaiian 42 = Guamanian or Chamorro 43 = Samoan 44 = Other Pacific Islander 5 = White</p> <p>If an applicant selects more than one racial designation, enter all codes corresponding to the applicant's selections.</p> <p>Use Code 7 (not applicable) only when the applicant or co-applicant is not a natural person or when applicant or co-applicant information is unavailable because the loan has been purchased by your institution.</p> <p>If there is more than one co-applicant, provide the required information only for the first co-applicant listed on the application form. If there are no co-applicants or co-borrowers, use Code 8 (no co-applicant) for "no coapplicant" race.</p>
<p>race_2</p>	<p>See race_1</p>
<p>race_3</p>	<p>See race_1</p>
<p>race_4</p>	<p>See race_1</p>
<p>race_5</p>	<p>See race_1</p>
<p>race1_other</p>	<p>Free form text field (100 Characters) for race code 1 - Specify in text the applicant's or borrower's enrolled or principal tribe if 1 is entered. Otherwise, leave this data field blank.</p>
<p>race27_other</p>	<p>Free form text field (100 Characters) for race code 27 - Specify in text the applicant's or borrower's Other Asian race(s) if 27 is entered. Otherwise, leave this data field blank.</p>

race44_other	Free form text field (100 Characters) for race code 44 - Specify in text the applicant's or borrower's Other Pacific Islander race(s) if 44 is entered. Otherwise, leave this data field blank.
race_determinant	Determinant for Race of Applicant/Borrower 1 = Collected on basis of visual observation or surname 2 = Not collected on basis of visual observation or surname 3 = Not Applicable
sex	Sex of applicant 1 = Male 2 = Female 3 = Not Provided 4 = Not Applicable 5 = No Co-applicant 6 = Co-Applicant selected both male and female
sex_determinant	Determinant for Applicant Sex 1 = Collected on basis of visual observation or surname 2 = Not collected on basis of visual observation or surname 3 = Not Applicable
age	Borrower Age in yearsnumber whole number value such as 24 Or 8888 = Not Applicable

5.8 Co-Applicant Information: <co_applicant_info> Element

This element contains information about co applicant ethnicity, race and sex.

<co_applicant_info> Element	
Child Element	Description
no_coapplicant	0, blank, or 1 (1 being true) example 1 = No Co-Applicant
coapplicant_ethnicity_1	See ethnicity_1 - If there are no co-applicants, use Code 5 for coapplicant_ethnicity_1.
coapplicant_ethnicity_2	See ethnicity_1
coapplicant_ethnicity_3	See ethnicity_1
coapplicant_ethnicity_4	See ethnicity_1
coapplicant_ethnicity_5	See ethnicity_1

coapplicant_ethnicity_other	If 14 = Other H or L used, then Other Hispanic or Latino Text of Co-Applicant or Co-Borrower - Free form text up to 100 characters else leave blank
coapplicant_ethnicity_determinant	Determinant for Ethnicity of CoApplicant/CoBorrower 1 = collected on basis of visual observation or surname 2 = not collected on basis of visual observation or surname 3 = Not applicable 4 = No co-applicant
coapplicant_race_1	See race_1 - If there are no co-applicants or co-borrowers, use Code 8 (no co-applicant) for “no coapplicant” race.
coapplicant_race_2	See race_1
coapplicant_race_3	See race_1
coapplicant_race_4	See race_1
coapplicant_race_5	See race_1
coapplicant_race1_other	Free form text field (100 Characters) for co-applicant race code 1 - Specify in text the co-applicant’s or co-borrower’s enrolled or principal tribe if 1 is entered. Otherwise, leave this data field blank.
coapplicant_race27_other	Free form text field (100 Characters) for co-applicant race code 27 - Specify in text the co-applicant’s or co-borrower’s Other Asian race(s) if 27 is entered. Otherwise, leave this data field blank.
coapplicant_race44_other	Free form text field (100 Characters) for co-applicant race code 44 - Specify in text the co-applicant’s or co-borrower’s Other Pacific Islander race(s) if 44 is entered. Otherwise, leave this data field blank.
coapplicant_race_determinant	Determinant for Co-applicant Race of Applicant/Borrower 1 = collected on basis of visual observation or surname 2 = not collected on basis of visual observation or surname 3 = Not Applicable 4= No Co-Applicant
coapplicant_sex	See sex - If there are no co-applicants or co-borrowers, use Code 5 (no co-applicant) for co-applicant sex.

Consumer Compliance Solutions

coapplicant_sex_determinant	Determinant for Co-Applicant Sex 1 = collected on basis of visual observation or surname 2 = not collected on basis of visual observation or surname 3 = Not Applicable 4 = No Co-Applicant
coapplicant_age	Co-Applicant Age in years number whole number value such as 24 Or 8888 = Not Applicable 9999 = No co-applicant

5.9 Underwriting Information: <underwriting_information> Element

This element contains information about the underwriting of the application.

<underwriting_information> Element	
Child Element	Description
applicant_income	The applicant’s yearly income, in thousands, rounded to the nearest thousand. Examples: An income of \$52,500 would be submitted as 53, An income of \$52,499 would be submitted as 52. Enter “NA” if the requirement to report gross annual income does not apply to the covered loan or application that your institution is reporting.

<p>credit_score</p>	<p>Credit Score of Applicant or Borrower Enter, in numeral form, the credit score, or scores relied on in making the credit decision for the applicant or borrower, or of the first coapplicant or co-borrower, as applicable.</p> <p>Example: If the credit score is 650, enter 650 7777 = Credit score is not a number 8888 = Not applicable 9999 = No co-applicant (Enter only in coapplicant_credit_score)</p> <p>Use Code 8888 if the requirement to report the credit score does not apply to the covered loan or application that your institution is reporting.</p> <p>Use Code 9999 in the co-applicant field if there are no co-applicants or co-borrowers</p> <p>Note: If Regulation C requires your institution to report a single score that corresponds to multiple applicants or borrowers, either report the credit score in the applicant field and use Code 8888 in the co-applicant field; or report the credit score in the co-applicant field and use Code 8888 in the applicant field.</p>
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<p>credit_model</p>	<p>Credit Model of Applicant or Borrower Name and Version of Credit Scoring Model 1 = Equifax Beacon 5.0 2 = Experian Fair Isaac Risk Model v2 3 = TransUnion FICO Risk Score Classic 04 4 = TransUnion FICO Risk Score Classic 98 5 = VantageScore 2.0 6 = VantageScore 3.0 7 = More than one credit scoring model 8 = Other credit scoring model 9 = Not applicable 10 = No co-applicant 11 = FICO Score 9 12 = FICO Score 8 13 = FICO Score 10 14 = FICO Score 10T 15 = Vantage Score 4.0</p> <p>Use Code 9 if the requirement to report the name and version of the credit scoring model does not apply to the covered loan or application that your institution is reporting.</p> <p>Use Code 10 in the co-applicant field if there are no co-applicants or co-borrowers</p> <p>Note: If Regulation C requires your institution to report a single score that corresponds to multiple applicants or borrowers, either report the name and version of the credit scoring model in the</p>
<p>credit_model_other</p>	<p>Other Credit Model Text of Applicant or Borrower If Code 8 is selected in the Name and Version of Credit Scoring Model Field, enter the specific other credit scoring model that is not listed above. The maximum number of characters for this field is 100 characters, including spaces. If 8 is not entered, leave this field blank.</p>
<p>coapplicant_credit_score</p>	<p>See credit_score - Use Code 9999 in the co-applicant field if there are no co-applicants or co-borrowers</p>
<p>coapplicant_credit_model</p>	<p>See Credit Model - Use Code 10 in the co-applicant field if there are no co-applicants or co-borrowers</p>

<p>coapplicant_credit_model_other</p>	<p>Other Credit Model Text of Co-Applicant or Co-Borrower If Code 8 is selected in the Name and Version of Credit Scoring Model Field, enter the specific other credit scoring model that is not listed above. The maximum number of characters for this field is 100 characters, including spaces. If 8 is not entered, leave this field blank.</p>
<p>debt_to_income</p>	<p>Enter, as a percentage, the ratio of the applicant’s or borrower’s total monthly debt to the total monthly income relied on in making the credit decision. Use decimal places only if the ratio relied upon uses decimal places.</p> <p>Example: If the relied upon debt-to-income ratio is 42.95, enter 42.95, and not 43. If, however, your institution rounded the ratio up to 43% and relied on the rounded-up number, enter 43.</p> <p>a. Enter “NA” if the requirement to report debt-to-income ratio does not apply to the covered loan or application that your institution is reporting.</p>
<p>combined_loan_to_value</p>	<p>Enter, as a percentage, the ratio of the total amount of debt secured by the property to the value of the property relied on in making the credit decision. Use decimal places only if the ratio relied upon uses decimal places.</p> <p>Example: If the relied upon combined loan-to-value ratio is 80.05, enter 80.05, and not 80</p> <p>If, however, your institution rounded the ratio down to 80 and relied on the rounded-down number, enter 80</p> <p>Enter “NA” if the requirement to report combined loan-to-value ratio does not apply to the covered loan or application that your institution is reporting.</p>

<p>automated_underwriting_system_1</p>	<p>Automated Underwriting System. Indicate the automated underwriting system(s) (AUS) used by your institution to evaluate the application by entering up to five (5) of the applicable Codes from the following:</p> <p>1 = Desktop Underwriter (DU) 2 = Loan Prospector or Loan Product Advisor (LP) 3 = Technology Open to Approved Lenders (TOTAL) Scorecard 4 = Guaranteed Underwriting System (GUS) 5 = Other 6 = Not applicable 7 = Internal Proprietary System</p> <p>Use Code 6 if the requirement to report an AUS does not apply to the covered loan or application that your institution is reporting. Leave the remaining Automated Underwriting System data fields blank.</p> <p>If fewer than five (5) automated underwriting systems were used by your institution to evaluate the application, leave the remaining Automated Underwriting System data fields blank.</p>
<p>automated_underwriting_system_2</p>	<p>1 = Desktop Underwriter (DU) 2 = Loan Prospector or Loan Product Advisor (LP) 3 = Technology Open to Approved Lenders (TOTAL) Scorecard 4 = Guaranteed Underwriting System (GUS) 5 = Other 7 = Internal Proprietary System</p>
<p>automated_underwriting_system_3</p>	<p>See automated_underwriting_system_2</p>
<p>automated_underwriting_system_4</p>	<p>See automated_underwriting_system_2</p>
<p>automated_underwriting_system_5</p>	<p>See automated_underwriting_system_2</p>

automated_underwriting_system_o ther	<p>Automated Underwriting System Conditional Free Form Text Field for Code 5: If Code 5 is selected in any Automated Underwriting System field, enter the name of the specific other AUS(s) not listed above. Enter more than one other Automated Underwriting System, as applicable. The maximum number of characters for this field is 255 characters, including spaces.</p> <p>If 5 is not entered, leave this field blank.</p>
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<p>automated_underwriting_system_result_1</p>	<p>Automated Underwriting System Result. Indicate the result(s) generated by the automated underwriting system (AUS) previously indicated by entering the applicable Code(s) from the following:</p> <ul style="list-style-type: none"> 1 = Approve/Eligible 2 = Approve/Ineligible 3 = Refer/Eligible 4 = Refer/Ineligible 5 = Refer with Caution 6 = Out of Scope 7 = Error 8 = Accept 9 = Caution 10 = Ineligible 11 = Incomplete 12 = Invalid 13 = Refer 14 = Eligible 15 = Unable to Determine or Unknown 16 = Other 17 = Not applicable 18 = Accept/Eligible 19 = Accept/Ineligible 20 = Accept/Unable to Determine 21 = Refer with Caution/Eligible 22 = Refer with Caution/Ineligible 23 = Refer/Unable to Determine 24 = Refer with Caution/Unable to Determine <p>Use Code 1, 2, 3, 4, 5, 6, or 7 for the AUS result returned by the AUS of the Federal National Mortgage Association (Fannie Mae).</p> <p>Use Code 8, 9, 10, 11, or 12 for the AUS result returned by the AUS of the Federal Home Loan Mortgage Corporation (Freddie Mac).</p> <p>Use Codes 8 or 13 for the AUS result returned by FHA TOTAL Scorecard.</p> <p>Use Code 5, 8, 10, 13, 14, or 15 for the AUS result returned by GUS.</p> <p>Use Code 17 if the requirement to report an AUS result does not apply to the covered loan or application that your institution is reporting. Leave the remaining</p>
<p>automated_underwriting_system_result_2</p>	<p>See automated_underwriting_system_result_1</p>

automated_underwriting_system_result_3	See automated_underwriting_system_result_1
automated_underwriting_system_result_4	See automated_underwriting_system_result_1
automated_underwriting_system_result_5	See automated_underwriting_system_result_1
automated_underwriting_system_result_other	Automated Underwriting System Result Conditional Free Form Text Field for Code 16: If Code 16 is selected in an Automated Underwriting System Result field, enter the specific other AUS result(s) not listed above. Enter more than one other Automated Underwriting System Result, as applicable. The maximum number of characters for this field is 255 characters, including spaces. If 16 is not entered, leave this field blank.

5.10 Purchaser Information: <purchaser_type> Element

This element contains information about the sale of the loan to a secondary market (where applicable).

<purchaser_type> Element	
Child Element	Description
purchaser	<p>Type of Purchaser. Enter the applicable code to indicate whether a loan that your institution originated or purchased was then sold to a secondary market entity within the same calendar year:</p> <ul style="list-style-type: none"> 0 = Loan was not originated or was not sold in calendar year covered by register 1 = Fannie Mae 2 = Ginnie Mae 3 = Freddie Mac 4 = Farmer Mac 5 = Private securitization 6 = Commercial bank, savings bank or savings association 7 = Life insurance company, credit union, mortgage bank, or finance company 8 = Affiliate institution 9 = Other type of purchaser <p>Use Code 0 for applications that were denied, withdrawn, or approved but not accepted by the applicant; and for files closed for incompleteness.</p>

Use Code 0 if you originated or purchased a loan and did not sell it during that same calendar year. If you sell the loan in a succeeding year, you need not report the sale.

Use Code 2 if you conditionally assign a loan to Ginnie Mae in connection with a mortgage-backed security transaction.

Use Code 8 for loans sold to an institution affiliated with you, such as your subsidiary or a subsidiary of your parent corporation.

5.11 Denial Reasons: <denial_reasons> Element

This element contains information about loan application was denied.

<denial_reason> Element	
Child Element	Description
denial_reason_1	<p>You may report the reason for denial, and you may indicate up to three reasons, using the following codes. Leave this column blank if the “action taken” on the application is not a denial. For example, do not complete this column if the application was withdrawn or the file was closed for incompleteness.</p> <p>1 = Debt-to-income ratio 2 = Employment history 3 = Credit history 4 = Collateral 5 = Insufficient cash (down payment, closing costs) 6 = Unverifiable information 7 = Credit application incomplete 8 = Mortgage insurance denied 9 = Other 10 = Not applicable</p> <p>If your institution uses the model form for adverse action contained in the Appendix to Regulation B (Form C-1 in Appendix C, Sample Notification Form), use the codes below: 1 = Income insufficient for amount of credit requested, and Excessive obligations in relation to income. 2 = Temporary or irregular employment, and Length of employment.</p>

	<p>3 = Insufficient number of credit references provided; Unacceptable type of credit references provided; No credit file; Limited credit experience; Poor credit performance with us; Delinquent past or present credit obligations with others; Garnishment, attachment, foreclosure, repossession, collection action, or judgment; and Bankruptcy.</p> <p>4 = Value or type of collateral not sufficient.</p> <p>6 = Unable to verify credit references; Unable to verify employment; Unable to verify income; and Unable to verify residence.</p> <p>7 = Credit application incomplete.</p> <p>9 = Length of residence; Temporary residence; and Other reasons specified on notice.</p> <p>10 = Not applicable - if the action taken on the application is not a denial. For example, by reporting that the requirement is not applicable if the loan is originated or purchased by the financial institution, or the application or preapproval request was approved but not accepted, or the application was withdrawn before a credit decision was made, or the file was closed for incompleteness.</p>
denial_reason_2	See denial_reason_1
denial_reason_3	See denial_reason_1
denial_reason_4	See denial_reason_1
denial_other	Reason for Denial Conditional Free Form Text Field for Code 9: If Code 9 is selected in any Reason for Denial field, enter the specific other reason(s) for denial not listed above. The maximum number of characters for this field is 255 characters, including spaces. If 9 is not entered, leave this field blank.

5.12 Pricing Information: <pricing_data> Element

This element contains information about the loan’s rate and term.

<pricing_data> Element	
Child Element	Description
rate_spread_input	<p>0 = Provide ‘0’ if rate spread should be calculated for the record.</p> <p>1 = Provide ‘1’ if rate spread is being provided. Rate spread will not calculate.</p>
rate_spread	<p>If the <rate_spread> element is populated with a value in the request, this exact value will be returned for <rate_spread> in the response. Enter, as a percentage, to at least three (3) decimal places</p>

	<p>If the <rate_spread> element is left blank in the request, a calculation will be made using the appropriate <pricing_data> elements (if present) in the request and that value will be returned for <rate_spread> in the response.</p> <p>If the rate spread calculation is not desired, enter NA.</p>
rate_lock_date	<p>Date the interest rate was set. The relevant date to use to determine the APOR is the date on which the loan's interest rate was set by the financial institution for the final time before closing.</p> <p>If an interest rate is set pursuant to a "lock-in" agreement between the lender and the borrower, then the date on which the agreement fixes the interest rate is the date the rate was set.</p> <p>If a rate is re-set after a lock-in agreement is executed (for example, because the borrower exercises a float-down option or the agreement expires), then the relevant date is the date the rate is re-set for the final time before closing.</p> <p>If no lock-in agreement is executed, then the relevant date is the date on which the institution sets the rate for the final time before closing.</p> <p>Format: MM/DD/YYYY or YYYY-MM-DD (Example: May 24, 2018 would be represented as 05/24/2018 or 2018-05-24 on tags)</p>
apr	<p>Annual Percentage Rate. Format: nn.nnn For example, express 7.543% as: 7.543</p>
maturity_date	<p>Date the loan matures. Format: MM/DD/YYYY or YYYY-MM-DD (Example: May 24, 2018 would be represented as 05/24/2018 or 2018-05-24 on tags)</p>
rate_type	<p>The type of interest rate on the loan. The element will accept these values</p> <p>1 = Fixed interest rate loans 2 = Variable interest rate loans</p>
var_term	<p>The period, in years, for which a Variable Rate Loan (RateType - 2) has a fixed term.</p>
total_loan_costs	<p>Enter Total Loan Costs in dollars or indicate that neither reporting requirement applies by entering "NA" for both.</p> <p>Example: If the total loan costs are \$2,399.04, enter 2399.04</p> <p>Enter "NA" if the requirement to report total loan costs does not apply to the covered loan or application that your institution is reporting.</p>

<p>total_points_and_fees</p>	<p>Enter in dollars, the total points and fees charged in connection with the covered loan. If the amount is zero, enter 0.</p> <p>Example: If the total points and fees are \$2,399.04, enter 2399.04</p> <p>Enter “NA” if the requirement to report total points and fees does not apply to the covered loan or application that your institution is reporting.</p>
<p>origination_fees</p>	<p>Enter, in dollars, the total of all itemized amounts that are designated borrower-paid at or before closing. If the total is zero, enter 0.</p> <p>Example: If the origination charges are \$2,399.04, enter 2399.04</p> <p>Enter “NA” if the requirement to report origination charges does not apply to the covered loan or application that your institution is reporting.</p>
<p>discount_points</p>	<p>Enter, in dollars, the points paid to the creditor to reduce the interest rate. If no points were paid, leave this field blank.</p> <p>Example: If the amount paid for discount points is \$2,399.04, enter 2399.04</p> <p>Enter “NA” if the requirement to report discount points does not apply to the covered loan or application that your institution is reporting.</p>
<p>lender_credits</p>	<p>Enter, in dollars, the amount of lender credits. If no lender credits were provided, leave this field blank.</p> <p>Example: If the amount is \$1500.24, enter 1500.24</p> <p>Enter “NA” if the requirement to report lender credits does not apply to the covered loan or application that your institution is reporting</p>

interest_rate	<p>Enter, as a percentage, to at least three (3) decimal places, the interest rate. Numbers calculated to beyond three (3) decimal places may either be reported beyond three (3) decimal places or rounded or truncated to three (3) decimal places. Decimal place trailing zeros may be either included or omitted.</p> <p>Example: If the interest rate is 4.125%, enter 4.125</p> <p>If the interest rate is exactly 4.500%, enter 4.5, 4.50, or 4.500</p> <p>Enter “NA” if the requirement to report interest rate does not apply to the covered loan or application that your institution is reporting.</p>
---------------	---

5.13 Interpreting Edit Check XML Responses

Edit Check response contain error and success codes that indicate the extent to which the loan application conforms to the CFPB HMDA DF regulations and requirements.

Sample Edit Check XML Response

```
<?xml version="1.0"?>
<pci_responses>
<lar_service>
<response>
<editchecks>
  <V608>A ULI with an invalid format was provided. Please review the information below and
  update your file accordingly. 1) The required format for ULI is alphanumeric with at least
  23 characters and up to 45 characters, and it cannot be left blank.</V608>
  <V611>An invalid Loan Type was reported. Please review the information below and update your
  file accordingly. 1) Loan Type must equal 1, 2, 3, or 4, and cannot be left blank.</V611>
  <Q601>Please verify the information below and update your file, if needed. 1) Application
  Date occurs more than two years prior to Action Taken Date.</Q601>
  <Q618>Please review the information below and update your file, if needed. 1) If
  Construction Method equals 2, then Manufactured Home Secured Property Type generally should
  not be 3.</Q618>
</editchecks>
<misc>
  <rate_spread>NA</rate_spread>
</misc>
<request_id>1</request_id>
</response>
</lar_service>
</pci_responses>
```

5.14 Error Code Information: <editchecks> Element

The <editchecks> element lists CFPB HMDA DF error codes and their descriptions.

HMDA edits are rules to assist filers in checking the accuracy of HMDA data prior to submission. There are four types of edits:

- **Syntactical:** Edits that check whether the loan/application register is in the correct format and whether the data covers the correct filing year. A syntactical edit occurs, for example, if none of the rows in the loan/application register begin with the number two (2) to indicate that the following data fields contain information relating to the reported loan or application. The loan/application register cannot be submitted until the filer corrects all syntactical edit errors and reuploads the updated loan/application register to the HMDA Platform. All Syntactical errors start with the letter 'S' (example: S123).
- **Validity:** Edits that check whether there are valid values in each data field. A validity edit occurs, for example, if the contact person's telephone number does not follow the format "999-999-9999." The loan/application register cannot be submitted until the filer corrects all validity edit errors and reuploads the updated loan/application register to the HMDA Platform. All Validity errors start with the letter 'V' (example: V123).
- **Quality:** Edits that check whether entries in the individual data fields or combinations of data fields conform to expected values. A quality edit occurs, for example, if the reported Tax Identification Number does not match the Tax Identification Number the institution reported on the previous year's loan/application register. The loan/application register cannot be submitted until the filer either confirms the accuracy of all values flagged by quality edits in the HMDA Platform, or corrects the flagged values and reuploads the updated loan/application register to the HMDA Platform. All Quality errors start with the letter 'Q' (example: Q123).
- **Macro Quality:** Edits that check whether the submitted loan/application register as a whole conforms to expected values. A macro quality edit occurs, for example, if the reported percentage of multifamily loans exceeds 10% of the loan/application register entries. The loan/application register cannot be submitted until the filer either confirms the accuracy of all the values flagged by the macro quality edits in the HMDA Platform or corrects the flagged values and reuploads the updated loan/application register to the HMDA Platform. All Macro Quality errors start with the letter 'Q' (example: Q123).

For a complete list of the edit descriptions, please reference the CFPB HMDA DF website at:
<https://s3.amazonaws.com/cfpb-hmda-public/prod/help/2021-hmda-fig.pdf>

Note: The CFPB HMDA DF updates its edits and error descriptions on an annual basis. Wolters Kluwer is responsible for updating edit information returned by HMDA Wiz ensuring that up-to-date results are returned.

6. Rate Spread Service

The Rate Spread Service for lar type HMZ4 (Prior to 2018) generates the spread calculates the spread between the Annual Percentage Rate (APR) and a survey-based estimate of APRs currently offered on prime mortgage loans of a comparable type utilizing the “Average Prime Offer Rates” fixed or adjustable table, lar type, action taken, amortization type, lock-in date, APR, fixed term (loan maturity) or variable term (initial fixed-rate period), and lien status. For first lien loans with a rate spread equal to or greater than 1.5 percentage points must be reported. Subordinate lien loans with a rate spread equal or greater than 3.5 percentage points must be reported.

The Rate Spread Service for lar type HMDF (2018 and later) generates the spread calculates the spread between the Annual Percentage Rate (APR) and a survey-based estimate of APRs currently offered on prime mortgage loans of a comparable type utilizing the “Average Prime Offer Rates” fixed or adjustable table, lar type, action taken, amortization type, lock-in date, APR, fixed term (loan maturity) or variable term (initial fixed-rate period), and lien status.

Sample Rate Spread XML Request - lar_type defaulted to HMDF

```
<pciserver_requests xmlns="http://www.pciwiz.com/PCiServer">
  <authentication>
    <institution_id></institution_id>
    <vendor_id></vendor_id>
    <username></username>
    <password></password>
  </authentication>
  <services>
    <ratespread_service>
      <settings>
        <lar_type>hmdf</lar_type>
      </settings>
    </ratespread_service>
  </services>
  <request>
    <request_id>1</request_id>
    <loan_identifier_information>
      <uli>123456789012345678901234567890123456789012300</uli>
      <lei>12345678901234567890</lei>
      <application_number>12345678901234567890123</application_number>
    </loan_identifier_information>
    <action>
      <action_taken>1</action_taken>
      <action_taken>2018-01-26</action_taken>
    </action>
    <pricing_data>
      <lien_status>1</lien_status>
      <rate_type>1</rate_type>
      <loan_term>30</loan_term>
      <var_term>10</var_term>
      <rate_lock_date>2018-05-17</rate_lock_date>
      <apr>20.357</apr>
    </pricing_data>
  </request>
  <request>
    <request_id>580</request_id>
    <loan_information>
```

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```
<application_date>2018-05-11</application_date>
</loan_information>
<pricing_data>
  <lien_status>1</lien_status>
  <rate_type>2</rate_type>
  <loan_term>30</loan_term>
  <var_term>5</var_term>
  <rate_lock_date>2018-05-17</rate_lock_date>
  <apr>7.769</apr>
</pricing_data>
</request>
</pciserver_requests>
```

Please refer to Section 0 for information on the <pricing_data> elements.

Sample Rate Spread XML Request - defaults

```
<pciserver_requests xmlns="http://www.pciwiz.com/PCiServer">
  <authentication>
    <institution_id> institution_id</institution_id>
    <vendor_id></vendor_id>
    <username></username>
    <password></password>
  </authentication>
  <services>
    <ratespread_service>
      <settings>
        <lar_type>hmdf</lar_type>
      <defaults>
        <action_taken>1</action_taken>
        <action_date>today</action_date>
      </defaults>
    </settings>
  </ratespread_service>
</services>
<request>
  <request_id>1</request_id>
  <loan_information>
    <application_date>2018-10-01</application_date>
    <loan_term>20</loan_term>
    <lien_status>1</lien_status>
    <introductory_rate_period>240</introductory_rate_period>
    <loan_type>1</loan_type>
    <property_type>1</property_type>
    <loan_purpose>1</loan_purpose>
    <occupancy>2</occupancy>
    <loan_amount_dollars>250000</loan_amount_dollars>
    <balloon_payment/>
    <interest_only_payment/>
    <negative_amortization/>
    <other_non_amortizing/>
    <application_method/>
    <initially_payable_to_your_institution/>
    <open_end_line_of_credit/>
    <business_commercial_purpose/>
    <preapproval_request/>
    <agency_code/>
  </loan_information>
</request>
</pciserver_requests>
```


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```
</loan_information>
<action>
  <action_taken></action_taken>
  <action_date></action_date>
</action>
<pricing_data>
  <reverse_mortgage/>
  <rate_spread/>
  <var_term></var_term>
  <rate_lock_date>2019-08-27</rate_lock_date>
  <apr>5.999</apr>
  <rate_type>1</rate_type>
  <rate_spread_input></rate_spread_input>
</pricing_data>
</request>
</pciserver_requests>
```

6.1 Interpreting Rate Spread XML Responses

If the data required to calculate rate spread is correctly provided in the Rate Spread XML Request, HMDA *Wiz* will return a rate spread value for each <request_id> in the file.

A rate spread of “NC” will result if HMDA *Wiz* does not have enough data to make the calculation.

Note: Rate spread values must be formatted with three decimal places and a leading zero. For example, enter 03.293.

Beyond three decimal places it is acceptable to either round the figure or truncate the digits beyond three decimal places. It will be up to integration partners to decide which logic to implement.

Note: Rate Spread calculations will result in a truncated value (as opposed to rounding). If the APR 3.1235% and the APOR is 3.25%, enter -0.1265. Alternatively, the rate spread may be truncated to -0.126 or rounded to -0.127.

Sample Rate Spread XML Response

```
<?xml version="1.0" encoding="UTF8"?>
<pci_responses>
  <ratespread_service>
    <response>
      <request_id>1</request_id>
      <rate_spread>16.017</rate_spread>
    </response>
    <response>
      <request_id>580</request_id>
      <rate_spread>2.779</rate_spread>
    </response>
  </ratespread_service>
</pci_responses>
```

7. Get LAR Service

As discussed in Section 0 of this document, when an institution licenses HMDA *Wiz* via an integration they can utilize functionality via the web services integration and also via their institution's own website at www.wizenterprise.com. The most versatile integrations allow clients to submit web service requests but also to upload their HMDA data records to their respective data files stored at www.wizenterprise.com. A HMDA *Wiz* integration uses the Get LAR Service to select the list of data files available for the institution to submit/insert records into.

For example, ABC Bank has three HMDA *Wiz* files:

HMDA LAR 2016

HMDA LAR 2017

HMDF LAR 2018

When accessing HMDA functionality via the integration, the core system would send a Get LAR Service request to the Wolters Kluwer HMDA *Wiz* servers to get a list of the file names and relevant ID numbers.

For example, Wolters Kluwer would return:

LAR Name = 'HMDA LAR 2016' and LAR ID '000000012'

LAR Name = 'HMDA LAR 2017' and LAR ID '000000013'

LAR Name = 'HMDF LAR 2018' and LAR ID '000000014'

A client wishing to work with their 2018 file might select the 'HMDF LAR 2018' from a drop down list in the user interface that integrated HMDA *Wiz* functionality.

Sample Get LAR XML Request

```
<?xml version="1.0" ?>
<pciserver_requests xmlns="http://www.pciwiz.com/PCiServer">
<authentication>
<institution_id></institution_id>
<vendor_id></vendor_id>
<username></username>
<password></password>
</authentication>
<services>
<get_lar_list_service>
<settings>
<lar_type>hmz4</lar_type>
</settings>
</get_lar_list_service>
<get_lar_list_service>
<settings>
<lar_type>hmdf</lar_type>
</settings>
</get_lar_list_service>
</services>
</pciserver_requests>
```

Note: For ease of use, Wolters Kluwer recommends populating the core application with a list of both the file name as well as the LAR ID so that files can easily be referenced and selected.

7.1 Interpreting Get LAR XML Responses

<lar_info> Element	
Child Element	Description
lar_name	The user defined file name.
lar_id	File identification number associated with the file in HMDA Wiz
lar_year	Activity Year of the file.

```
<?xml version="1.0" encoding="UTF-8"?>
<pci_responses>
<get_lar_list>
<response>
<subsite url="https://www.wizenterprise.com/Compliance1052">
<lar_info>
  <lar_name>HMDA LAR 2017</lar_name>
  <lar_id>000000013</lar_id>
  <lar_year>2017</lar_year>
</lar_info>
<lar_info>
  <lar_name>HMDF LAR 2018</lar_name>
  <lar_id>000000014</lar_id>
  <lar_year>2018</lar_year>
</lar_info>
</subsite>
</response>
</get_lar_list>
</pci_responses>
```

8. Insert Record Service

Once a client has selected the HMDA *Wiz* file that they would like to work with, the Insert Record Service will be responsible for uploading records from the core application to the desired HMDA *Wiz* file. As previously stated this Service has both single and batch functionalities. Once a user has the ability to insert records into their HMDA *Wiz* files, they will have the ability to perform additional HMDA data management tasks at www.wizenterprise.com.

Note: The Insert Record Service is most often used by HMDA *Wiz* integration partners to add records to HMDA *Wiz* files. A minor drawback to this approach is the potential for duplicate records to be added to the selected file if a user inserts the same record multiple times. While duplicate records can easily be identified and cleaned up by users in www.wizenterprise.com, the Insert Record Service can be alternatively used to *update* existing records in HMDA *Wiz* files.

To utilize the Update record functionality, the core application would need to store and maintain Row ID information for each of the files with row_id information. With row information provided in the <loan_information> element, the XML request would alternately use <lar_action>**update**</lar_action> in the <settings> element.

```
<settings>
<edit_check_year>2018</edit_check_year>
```

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```
<lar_id>000000014</lar_id>
<
>hmdf</lar_type>
<lar_action>update</lar_action>
</settings>
```

Sample Insert Record XML Request (lar_action = insert)

```
<?xml version="1.0"?>
<pciserver_requests xmlns="http://www.pciwiz.com/PCiServer">
  <authentication>
    <institution_id></institution_id>
    <vendor_id></vendor_id>
    <username></username>
    <password></password>
  </authentication>
  <services>
    <lar_service>
      <settings>
        <edit_check_year>2018</edit_check_year>
        <lar_id>16758</lar_id>
        <lar_type>hmdf</lar_type>
        <lar_action>insert</lar_action>
      </settings>
    </lar_service>
  </services>
  <request>
    <request_id>1</request_id>
    <manual_geocode>1</manual_geocode>
  </loan_identifier_information>
  <loan_information>
    <uli>123456789012345678901234567890123456789012300</uli>
    <lei>12345678901234567890</lei>
    <application_number>12345678901234567890123</application_number>
    <mortgage_loan_origination_NMLSR_id>123450</mortgage_loan_origination_NMLSR_id>
  </loan_identifier_information>
  <loan_information>
    <is_exempt>false</is_exempt>
    <application_date>2018-03-27</application_date>
    <loan_type>1</loan_type>
    <property_type>1</property_type>
    <loan_purpose>1</loan_purpose>
    <occupancy>2</occupancy>
    <loan_amount_dollars>250000</loan_amount_dollars>
    <hoepa_status>2</hoepa_status>
    <lien_status>1</lien_status>
    <prepayment_penalty_term>24</prepayment_penalty_term>
    <loan_term_months>360</loan_term_months>
    <loan_term></loan_term>
    <introductory_rate_period>24</introductory_rate_period>
    <balloon_payment>2</balloon_payment>
    <interest_only_payment>2</interest_only_payment>
    <negative_amortization>2</negative_amortization>
    <other_non_amortizing>2</other_non_amortizing>
    <application_method>1</application_method>
    <initially_payable_to_your_institution>1</initially_payable_to_your_institution>
    <reverse_mortgage>2</reverse_mortgage>
    <open_end_line_of_credit>2</open_end_line_of_credit>
    <business_commercial_purpose>2</business_commercial_purpose>
    <preapproval_request>2</preapproval_request>
    <agency_code>3</agency_code>
  </loan_information>
</action>
```

Consumer Compliance Solutions

```
<action_taken>1</action_taken>
<action_date>2018-03-30</action_date>
</action>
<property_location>
  <address_1>30 Winter Street</address_1>
  <address_2></address_2>
  <city>Boston</city>
  <state>MA</state>
  <zip>02108</zip>
  <zip4></zip4>
</property_location>
<census_info>
  <msa></msa>
  <state_fips></state_fips>
  <county_fips></county_fips>
  <census_tract></census_tract>
</census_info>
<applicant_info>
  <first_name>John</first_name>
  <last_name>Doe</last_name>
  <ethnicity_1>2</ethnicity_1>
  <ethnicity_2></ethnicity_2>
  <ethnicity_3></ethnicity_3>
  <ethnicity_4></ethnicity_4>
  <ethnicity_5></ethnicity_5>
  <ethnicity_other></ethnicity_other>
  <ethnicity_determinant>2</ethnicity_determinant>
  <race_1>4</race_1>
  <race_2></race_2>
  <race_3></race_3>
  <race_4></race_4>
  <race_5></race_5>
  <race1_other></race1_other>
  <race27_other></race27_other>
  <race44_other></race44_other>
  <race_determinant>2</race_determinant>
  <sex>1</sex>
  <sex_determinant>2</sex_determinant>
  <age>27</age>
</applicant_info>
<co_applicant_info>
  <no_coapplicant>1</no_coapplicant>
  <coapplicant_ethnicity_1>5</coapplicant_ethnicity_1>
  <coapplicant_ethnicity_2></coapplicant_ethnicity_2>
  <coapplicant_ethnicity_3></coapplicant_ethnicity_3>
  <coapplicant_ethnicity_4></coapplicant_ethnicity_4>
  <coapplicant_ethnicity_5></coapplicant_ethnicity_5>
  <coapplicant_ethnicity_other></coapplicant_ethnicity_other>
  <coapplicant_ethnicity_determinant>4</coapplicant_ethnicity_determinant>
  <coapplicant_race_1>8</coapplicant_race_1>
  <coapplicant_race_2></coapplicant_race_2>
  <coapplicant_race_3></coapplicant_race_3>
  <coapplicant_race_4></coapplicant_race_4>
  <coapplicant_race_5></coapplicant_race_5>
  <coapplicant_race1_other></coapplicant_race1_other>
  <coapplicant_race27_other></coapplicant_race27_other>
  <coapplicant_race44_other></coapplicant_race44_other>
  <coapplicant_race_determinant>4</coapplicant_race_determinant>
  <coapplicant_sex>5</coapplicant_sex>
  <coapplicant_sex_determinant>4</coapplicant_sex_determinant>
  <coapplicant_age>50</coapplicant_age>
</co_applicant_info>
```

Consumer Compliance Solutions

```
<underwriting_information>
  <applicant_income>780</applicant_income>
  <credit_score>775</credit_score>
  <credit_model>1</credit_model>
  <credit_model_other></credit_model_other>
  <coapplicant_credit_score>9999</coapplicant_credit_score>
  <coapplicant_credit_model></coapplicant_credit_model>
  <coapplicant_credit_model_other></coapplicant_credit_model_other>
  <debt_to_income>23.55</debt_to_income>
  <combined_loan_to_value>23.55</combined_loan_to_value>
  <automated_underwriting_system_1>1</automated_underwriting_system_1>
  <automated_underwriting_system_2>2</automated_underwriting_system_2>
  <automated_underwriting_system_3>3</automated_underwriting_system_3>
  <automated_underwriting_system_4>4</automated_underwriting_system_4>
  <automated_underwriting_system_5>5</automated_underwriting_system_5>
  <automated_underwriting_system_other></automated_underwriting_system_other>
  <automated_underwriting_system_result_1>1</automated_underwriting_system_result_1>
  <automated_underwriting_system_result_2>2</automated_underwriting_system_result_2>
  <automated_underwriting_system_result_3>3</automated_underwriting_system_result_3>
  <automated_underwriting_system_result_4>4</automated_underwriting_system_result_4>
  <automated_underwriting_system_result_5>5</automated_underwriting_system_result_5>
  <automated_underwriting_system_result_other></automated_underwriting_system_result_other>
</underwriting_information>
<purchaser_type>
  <purchaser>0</purchaser>
</purchaser_type>
<property_information>
  <construction_method>1</construction_method>
  <occupancy_type>1</occupancy_type>
  <property_value>350500</property_value>
  <manufactured_home_secured_property_type>3</manufactured_home_secured_property_type>
  <manufactured_home_land_property_interest>5</manufactured_home_land_property_interest>
  <total_units>5</total_units>
  <multifamily_affordable_units>0</multifamily_affordable_units>
  <rent></rent>
  <no_of_bedroom></no_of_bedroom>
</property_information>
<denial_reasons>
  <denial_reason_1></denial_reason_1>
  <denial_reason_2></denial_reason_2>
  <denial_reason_3></denial_reason_3>
  <denial_reason_4></denial_reason_4>
  <denial_reason_other></denial_reason_other></denial_reasons>
<pricing_data>
  <rate_spread>NA</rate_spread>
  <total_loan_costs>2399.04</total_loan_costs>
  <total_points_and_fees>2399.04</total_points_and_fees>
  <origination_fees>2399.04</origination_fees>
  <discount_points>2399.04</discount_points>
  <lender_credits>2399.04</lender_credits>
  <interest_rate>04.125</interest_rate>
  <rate_spread_input></rate_spread_input>
  <rate_type>2</rate_type>
  <var_term>10</var_term>
  <rate_lock_date>2018-01-16</rate_lock_date>
  <apr>8.234</apr>
  <maturity_date>2022-01-16</maturity_date>
</pricing_data>
<fairlending_information>
  <ltv>12</ltv>
  <noterate>12</noterate>
  <cltv>3</cltv>
  <beratio>45</beratio>
```

Consumer Compliance Solutions

```
<feratio>4</feratio>
<cust_credt>700</cust_credt>
<age>36</age>
<coa_age>37</coa_age>
<loanprog>df</loanprog>
<channel>ded</channel>
<netou>45</netou>
<broker>ad</broker>
<doctype>fd</doctype>
<marital_status></marital_status>
<comarital_status></comarital_status>
</fairlending_information>
</request>
</pciserver_requests>
```

Insert Response:

```
<?xml version="1.0" encoding="UTF-8"?><pci_responses><lar_service><response><message>1 record(s) inserted successfully in
16758</message><lar_id>16758</lar_id><row_id>3</row_id><record_count>1</record_count><request_id>1</request_id></response></lar_service></pci_responses>
```

Sample Insert Record XML Request (lar_action = update)

```
<?xml version="1.0"?>
<pciserver_requests xmlns="http://www.pciwiz.com/PCiServer">
  <authentication>
    <institution_id></institution_id>
    <vendor_id></vendor_id>
    <username></username>
    <password></password>
  </authentication>
  <services>
    <lar_service>
      <settings>
        <edit_check_year>2018</edit_check_year>
        <lar_id>16758</lar_id>
        <lar_type>hmdf</lar_type>
        <lar_action>update</lar_action>
      </settings>
    </lar_service>
  </services>
  <request>
    <request_id>1</request_id>
    <manual_geocode>1</manual_geocode>
    <loan_identifier_information>
      <uli>123456789012345678901234567890123456789012300</uli>
      <lei>12345678901234567890</lei>
    </loan_identifier_information>
    <application_number>12345678901234567890123</application_number>
    <mortgage_loan_origination_NMLSR_id>123450</mortgage_loan_origination_NMLSR_id>
  </request>
</pciserver_requests>
<loan_information>
  <row_id>3</row_id>
  <is_exempt>false</is_exempt>
  <application_date>2018-03-27</application_date>
  <loan_type>1</loan_type>
  <property_type>1</property_type>
  <loan_purpose>1</loan_purpose>
  <occupancy>2</occupancy>
  <loan_amount_dollars>250000</loan_amount_dollars>
  <hoepa_status>2</hoepa_status>
  <lien_status>1</lien_status>
  <prepayment_penalty_term>24</prepayment_penalty_term>
  <loan_term_months>360</loan_term_months>
  <loan_term></loan_term>
  <introductory_rate_period>24</introductory_rate_period>
```

Consumer Compliance Solutions

```
<balloon_payment>2</balloon_payment>
<interest_only_payment>2</interest_only_payment>
<negative_amortization>2</negative_amortization>
<other_non_amortizing>2</other_non_amortizing>
<application_method>1</application_method>
<initially_payable_to_your_institution>1</initially_payable_to_your_institution>
<reverse_mortgage>2</reverse_mortgage>
<open_end_line_of_credit>2</open_end_line_of_credit>
<business_commercial_purpose>2</business_commercial_purpose>
<preapproval_request>2</preapproval_request>
<agency_code>3</agency_code>
</loan_information>
<action>
  <action_taken>1</action_taken>
  <action_date>2018-03-30</action_date>
</action>
<property_location>
  <address_1>30 Winter Street</address_1>
  <address_2></address_2>
  <city>Boston</city>
  <state>MA</state>
  <zip>02108</zip>
  <zip4></zip4>
</property_location>
<census_info>
  <msa></msa>
  <state_fips></state_fips>
  <county_fips></county_fips>
  <census_tract></census_tract>
</census_info>
<applicant_info>
  <first_name>Jane</first_name>
  <last_name>Doe</last_name>
  <ethnicity_1>2</ethnicity_1>
  <ethnicity_2></ethnicity_2>
  <ethnicity_3></ethnicity_3>
  <ethnicity_4></ethnicity_4>
  <ethnicity_5></ethnicity_5>
  <ethnicity_other></ethnicity_other>
  <ethnicity_determinant>2</ethnicity_determinant>
  <race_1>4</race_1>
  <race_2></race_2>
  <race_3></race_3>
  <race_4></race_4>
  <race_5></race_5>
  <race1_other></race1_other>
  <race27_other></race27_other>
  <race44_other></race44_other>
  <race_determinant>2</race_determinant>
  <sex>1</sex>
  <sex_determinant>2</sex_determinant>
  <age>27</age>
</applicant_info>
<co_applicant_info>
  <no_coapplicant>1</no_coapplicant>
  <coapplicant_ethnicity_1>5</coapplicant_ethnicity_1>
  <coapplicant_ethnicity_2></coapplicant_ethnicity_2>
  <coapplicant_ethnicity_3></coapplicant_ethnicity_3>
  <coapplicant_ethnicity_4></coapplicant_ethnicity_4>
  <coapplicant_ethnicity_5></coapplicant_ethnicity_5>
  <coapplicant_ethnicity_other></coapplicant_ethnicity_other>
```


Consumer Compliance Solutions

```
<coapplicant_ethnicity_determinant>4</coapplicant_ethnicity_determinant>
<coapplicant_race_1>8</coapplicant_race_1>
<coapplicant_race_2></coapplicant_race_2>
<coapplicant_race_3></coapplicant_race_3>
<coapplicant_race_4></coapplicant_race_4>
<coapplicant_race_5></coapplicant_race_5>
<coapplicant_race1_other></coapplicant_race1_other>
<coapplicant_race27_other></coapplicant_race27_other>
<coapplicant_race44_other></coapplicant_race44_other>
<coapplicant_race_determinant>4</coapplicant_race_determinant>
<coapplicant_sex>5</coapplicant_sex>
<coapplicant_sex_determinant>4</coapplicant_sex_determinant>
<coapplicant_age>50</coapplicant_age>
</co_applicant_info>
<underwriting_information>
  <applicant_income>780</applicant_income>
  <credit_score>775</credit_score>
  <credit_model>1</credit_model>
  <credit_model_other></credit_model_other>
  <coapplicant_credit_score>9999</coapplicant_credit_score>
  <coapplicant_credit_model></coapplicant_credit_model>
  <coapplicant_credit_model_other></coapplicant_credit_model_other>
  <debt_to_income>23.55</debt_to_income>
  <combined_loan_to_value>23.55</combined_loan_to_value>
  <automated_underwriting_system_1>1</automated_underwriting_system_1>
  <automated_underwriting_system_2>2</automated_underwriting_system_2>
  <automated_underwriting_system_3>3</automated_underwriting_system_3>
  <automated_underwriting_system_4>4</automated_underwriting_system_4>
  <automated_underwriting_system_5>5</automated_underwriting_system_5>
  <automated_underwriting_system_other></automated_underwriting_system_other>
  <automated_underwriting_system_result_1>1</automated_underwriting_system_result_1>
  <automated_underwriting_system_result_2>2</automated_underwriting_system_result_2>
  <automated_underwriting_system_result_3>3</automated_underwriting_system_result_3>
  <automated_underwriting_system_result_4>4</automated_underwriting_system_result_4>
  <automated_underwriting_system_result_5>5</automated_underwriting_system_result_5>
<automated_underwriting_system_result_other></automated_underwriting_system_result_other>
</underwriting_information>
<purchaser_type>
  <purchaser>0</purchaser>
</purchaser_type>
<property_information>
  <construction_method>1</construction_method>
  <occupancy_type>1</occupancy_type>
  <property_value>350500</property_value>
  <manufactured_home_secured_property_type>3</manufactured_home_secured_property_type>
  <manufactured_home_land_property_interest>5</manufactured_home_land_property_interest>
  <total_units>5</total_units>
  <multifamily_affordable_units>0</multifamily_affordable_units>
  <rent></rent>
  <no_of_bedroom></no_of_bedroom>
</property_information>
<denial_reasons>
  <denial_reason_1></denial_reason_1>
  <denial_reason_2></denial_reason_2>
  <denial_reason_3></denial_reason_3>
  <denial_reason_4></denial_reason_4>
  <denial_reason_other></denial_reason_other></denial_reasons>
<pricing_data>
  <rate_spread>NA</rate_spread>
  <total_loan_costs>2399.04</total_loan_costs>
  <total_points_and_fees>2399.04</total_points_and_fees>
  <origination_fees>2399.04</origination_fees>
```

Consumer Compliance Solutions

```

    <discount_points>2399.04</discount_points>
    <lender_credits>2399.04</lender_credits>
    <interest_rate>04.125</interest_rate>
    <rate_spread_input></rate_spread_input>
    <rate_type>2</rate_type>
    <var_term>10</var_term>
    <rate_lock_date>2018-01-16</rate_lock_date>
    <apr>8.234</apr>
    <maturity_date>2022-01-16</maturity_date>
</pricing_data>
<fairlending_information>
    <ltv>12</ltv>
    <noterate>12</noterate>
    <cltv>3</cltv>
    <beratio>45</beratio>
    <feratio>4</feratio>
    <cust_credt>700</cust_credt>
    <age>36</age>
    <coa_age>37</coa_age>
    <loanprog>df</loanprog>
    <channel>ded</channel>
    <netou>45</netou>
    <broker>ad</broker>
    <doctype>fd</doctype>
    <marital_status></marital_status>
    <comarital_status></comarital_status>
</fairlending_information>
</request>
</pciserver_requests>

```

Update Response:

```

<?xml version="1.0" encoding="UTF-8"?><pci_responses><lar_service><response><message>1 record(s) updated successfully in
16758</message><lar_id>16758</lar_id><row_id>3</row_id><record_count>1</record_count><application_number></application_number><uli></uli><re
quest_id>1</request_id></response></lar_service></pci_responses>

```

8.1 Authentication Information: <authentication> Element

Each geocoding request must include authentication information. Authentication information for each of the elements below will be provided by Wolters Kluwer during time of implementation.

<authentication> Element	
Child Element	Description
institution_id	Identifies the institution
vendor_id	Identifies the vendor
username	Username for this request
password	Password for this request

8.2 LAR Service: <settings> Element

<settings> Element	
Child Element	Description
edit_check_year	The activity year of the LAR. This value is returned by the Get LAR service.
lar_id	HMDA Wiz file ID returned by the Get LAR service

lar_type	H MDF
lar_action	Insert - will insert a record
	Update - will update a record, if row_id is set

8.3 Manual_Geocode Element

The manual_geocode element is available to indicate whether an individual record should be geocoded when inserted into HMDA *Wiz*. Institutions may use this optional element to indicate that the geocoded values available in the <census_info> element should not be overwritten by HMDA *Wiz*.

A <manual_geocode> value of '0' indicates that the record should be geocoded by HMDA *Wiz*.

A <manual_geocode> value of '1' indicates that a record has been manually geocoded and HMDA *Wiz* should not re-geocode it.

9. Report Service

The Report Service prepares three reports:

1. Detailed Report (Non-Public LAR)
2. HMDA Filing Summary - AKA Transmittal Report
3. IRS Report

9.1 Report Service: <settings> Element

<settings> Element	
Child Element	Description
lar_type	H MDF
activity_year	Enter, in numeral form, the calendar year the data submission covers, using YYYY format. Example: If the data covers calendar year 2018, enter 2018
activity_quarter	Indicate the calendar quarter the data submission covers by entering the applicable Code from the following: Code 4 – Annual submissions for covered loans and applications with respect to which final action was taken from January 1st (01/01) and December 31st (12/31)
institution_name	Enter the name of the financial institution that is submitting HMDA data. Example: If the submission contains HMDA data for Ficus Bank, enter Ficus Bank.
con_name	Example: If the contact person's name is Erika Otis, enter Erika Otis.

con_phone	Example: If the phone number is (999) 999-9999, enter 999-999-9999
email	Example: If the e-mail address is erikaotis@bank.com, enter erikaotis@bank.com.
address1	<p>Enter the street address of the contact person's office as one (1) data field. U.S. Postal Service Publication 28, SubSections 231-239 can be used as a guide for formatting the street address. Address components include, as applicable, the following individual items:</p> <ul style="list-style-type: none"> • Primary Address Number • Predirectional • Street Name • Prefix • Suffix • Postdirectional • Secondary Address Identifier, such as suite • Secondary Address, such as suite number <p>Example: 4321 W Random Blvd Ste 201 Primary Address Number: "4321" Predirectional: "W" Street Name: "Random" Suffix: "Blvd" Secondary Address Identifier: "Ste" Secondary Address: "201"</p>
city	Enter the city of the contact person's office as one (1) data field.
state	Enter the two-letter state code of the contact person's office as one (1) data field.
zip	Enter the ZIP code of the contact person's office as one (1) data field. Examples: 90049 or 90049-9998
zip4	(Optional) Enter the ZIP+4 code of the contact person's office as one (1) data field.

regulator	<p>Indicate your financial institution’s appropriate Federal agency by entering the applicable Code from the following:</p> <p>Code 1 – Office of the Comptroller of the Currency (OCC) Code 2 – Federal Reserve System (FRS) 59 Code 3 – Federal Deposit Insurance Corporation (FDIC) Code 5 – National Credit Union Administration (NCUA) Code 7 – United States Department of Housing and Urban Development (HUD) Code 9 – Consumer Financial Protection Bureau (CFPB)</p>
entries_number	<p>Enter, in numeral form, the total number of entries contained in the submission.</p> <p>Example: If your institution is submitting 5,000 entries, enter 5000.</p>
taxid	<p>Enter your financial institution’s Federal Taxpayer Identification Number.</p> <p>Example: If your institution’s Federal Taxpayer Identification number is 99-9999999, enter 99-9999999.</p>
lei	<p>Enter your financial institution’s LEI as defined in Paragraph 4(a)(1)(i)(A).</p> <p>Example: If your institution’s LEI is 10Bx939c5543TqA1144M, enter 10Bx939c5543TqA1144M.</p>
report_type	Enter pdf - outputs the reports to pdf
detailed_report	Enter true - creates detail report or enter false to skip report
transmittal_report	Enter true - creates detail report or enter false to skip report
irs_report	Enter true - creates detail report or enter false to skip report

9.2 Report XML Request for HMDF 2018

```
<?xml version="1.0" encoding="UTF-8"?>
<pciserver_requests
  xmlns="http://www.pciwiz.com/PCiServer">
  <authentication>
    <institution_id></institution_id>
    <vendor_id></vendor_id>
    <username></username>
    <password></password>
  </authentication>
  <services>
    <report_service>
      <settings>
        <lar_type>hmdf</lar_type>
        <institution_name>Financial Institution Name</institution_name>
        <activity_year>2018</activity_year>
        <activity_quarter>4</activity_quarter>
        <con_name>Contact person name</con_name>
      </settings>
    </report_service>
  </services>
</pciserver_requests>
```

Consumer Compliance Solutions

```
<con_phone>555-555-5555</con_phone>
<email>ContactPerson@bank.com</email>
<address1>130 Turner ST</address1>
<city>Waltham</city>
<state>MA</state>
<zip>02453</zip>
  <zip4></zip4>
<regulator>9</regulator>
<entries_number>3</entries_number>
<taxid>12-3456789</taxid>
<lei>12345678901111111111</lei>
<report_type>pdf</report_type>
<detailed_report>>true</detailed_report>
<transmittal_report>>true</transmittal_report>
<irs_report>>true</irs_report>
<resp_id></resp_id>
<name></name>
<calendar_year></calendar_year>
<sign_name></sign_name>
<sign_phone></sign_phone>
</settings>
</report_service>
</services>
<request>
  <request_id>2</request_id>
  <loan_identifier_information>
    <uli>123456789012345678901234567890123456789012300</uli>
    <lei>12345678901234567890</lei>
    <application_number>12345678901234567890123</application_number>
    <mortgage_loan_origination_NMLSR_id>123450</mortgage_loan_origination_NMLSR_id>
  </loan_identifier_information>
  <loan_information>
    <is_exempt>>false</is_exempt>
    <application_date>2018-03-27</application_date>
    <loan_type>1</loan_type>
    <property_type>1</property_type>
    <loan_purpose>1</loan_purpose>
    <occupancy>2</occupancy>
    <loan_amount_dollars>250597.95</loan_amount_dollars>
    <hoepa_status>2</hoepa_status>
    <lien_status>1</lien_status>
    <prepayment_penalty_term>24</prepayment_penalty_term>
    <loan_term_months>360</loan_term_months>
    <introductory_rate_period>24</introductory_rate_period>
    <balloon_payment>2</balloon_payment>
    <interest_only_payment>2</interest_only_payment>
    <negative_amortization>2</negative_amortization>
    <other_non_amoritizing>2</other_non_amoritizing>
    <application_method>1</application_method>
    <initially_payable_to_your_institution>1</initially_payable_to_your_institution>
    <reverse_mortgage>2</reverse_mortgage>
    <open_end_line_of_credit>2</open_end_line_of_credit>
    <business_commercial_purpose>2</business_commercial_purpose>
    <preapproval_request>2</preapproval_request>
    <agency_code>9</agency_code>
  </loan_information>
  <action>
    <action_taken>1</action_taken>
    <action_date>2018-03-30</action_date>
  </action>
  <property_location>
    <address_1>30 Winter Street</address_1>
    <address_2></address_2>
```

Consumer Compliance Solutions

```
<city>Boston</city>
<state>MA</state>
<zip>02108</zip>
<zip4></zip4>
</property_location>
<census_info>
  <msa>14454</msa>
  <state_fips>25</state_fips>
  <county_fips>025</county_fips>
  <census_tract>0701.01</census_tract>
</census_info>
<applicant_info>
  <ethnicity_1>1</ethnicity_1>
  <ethnicity_2>11</ethnicity_2>
  <ethnicity_3>12</ethnicity_3>
  <ethnicity_4>13</ethnicity_4>
  <ethnicity_5>14</ethnicity_5>
  <ethnicity_other></ethnicity_other>
  <ethnicity_determinant>2</ethnicity_determinant>
  <race_1>4</race_1>
  <race_2>3</race_2>
  <race_3>3</race_3>
  <race_4>1</race_4>
  <race_5>21</race_5>
  <race1_other></race1_other>
  <race27_other></race27_other>
  <race44_other></race44_other>
  <race_determinant>2</race_determinant>
  <sex>1</sex>
  <sex_determinant>2</sex_determinant>
  <age>27</age>
</applicant_info>
<co_applicant_info>
  <no_coapplicant>1</no_coapplicant>
  <coapplicant_ethnicity_1></coapplicant_ethnicity_1>
  <coapplicant_ethnicity_2></coapplicant_ethnicity_2>
  <coapplicant_ethnicity_3></coapplicant_ethnicity_3>
  <coapplicant_ethnicity_4></coapplicant_ethnicity_4>
  <coapplicant_ethnicity_5></coapplicant_ethnicity_5>
  <coapplicant_ethnicity_other></coapplicant_ethnicity_other>
  <coapplicant_ethnicity_determinant></coapplicant_ethnicity_determinant>
  <coapplicant_race_1></coapplicant_race_1>
  <coapplicant_race_2></coapplicant_race_2>
  <coapplicant_race_3></coapplicant_race_3>
  <coapplicant_race_4></coapplicant_race_4>
  <coapplicant_race_5></coapplicant_race_5>
  <coapplicant_race1_other></coapplicant_race1_other>
  <coapplicant_race27_other></coapplicant_race27_other>
  <coapplicant_race44_other></coapplicant_race44_other>
  <coapplicant_race_determinant></coapplicant_race_determinant>
  <coapplicant_sex></coapplicant_sex>
  <coapplicant_sex_determinant></coapplicant_sex_determinant>
  <coapplicant_age></coapplicant_age>
</co_applicant_info>
<underwriting_information>
  <applicant_income>780</applicant_income>
  <credit_score>775</credit_score>
  <credit_model>1</credit_model>
  <credit_model_other></credit_model_other>
  <coapplicant_credit_score></coapplicant_credit_score>
  <coapplicant_credit_model></coapplicant_credit_model>
  <coapplicant_credit_model_other></coapplicant_credit_model_other>
  <debt_to_income>23.55</debt_to_income>
```

Consumer Compliance Solutions

```
<combined_loan_to_value>76.55</combined_loan_to_value>
<automated_underwriting_system_1>1</automated_underwriting_system_1>
<automated_underwriting_system_2>2</automated_underwriting_system_2>
<automated_underwriting_system_3>3</automated_underwriting_system_3>
<automated_underwriting_system_4>4</automated_underwriting_system_4>
<automated_underwriting_system_5>5</automated_underwriting_system_5>
<automated_underwriting_system_other></automated_underwriting_system_other>
<automated_underwriting_system_result_1>1</automated_underwriting_system_result_1>
<automated_underwriting_system_result_2>2</automated_underwriting_system_result_2>
<automated_underwriting_system_result_3>3</automated_underwriting_system_result_3>
<automated_underwriting_system_result_4>4</automated_underwriting_system_result_4>
<automated_underwriting_system_result_5>5</automated_underwriting_system_result_5>

  <automated_underwriting_system_result_other></automated_underwriting_system_result_other>
</underwriting_information>
<purchaser_type>
  <purchaser>0</purchaser>
</purchaser_type>
<property_information>
  <construction_method>1</construction_method>
  <occupancy_type>1</occupancy_type>
  <property_value>350500</property_value>
  <manufactured_home_secured_property_type>3</manufactured_home_secured_property_type>
  <manufactured_home_land_property_interest>5</manufactured_home_land_property_interest>
  <total_units>5</total_units>
  <multifamily_affordable_units>0</multifamily_affordable_units>
  <rent></rent>
  <no_of_bedroom></no_of_bedroom>
</property_information>
<denial_reasons>
  <denial_reason_1>10</denial_reason_1>
  <denial_reason_2></denial_reason_2>
  <denial_reason_3></denial_reason_3>
  <denial_reason_4></denial_reason_4>
  <denial_reason_other></denial_reason_other>
</denial_reasons>
<pricing_data>
  <rate_spread>NA</rate_spread>
  <total_loan_costs>2399.04</total_loan_costs>
  <total_points_and_fees>2399.04</total_points_and_fees>
  <origination_fees>299.04</origination_fees>
  <discount_points>299.04</discount_points>
  <lender_credits>399.04</lender_credits>
  <interest_rate>04.125</interest_rate>
  <rate_spread_input>1</rate_spread_input>
  <rate_type>2</rate_type>
  <var_term>10</var_term>
  <rate_lock_date>2018-01-16</rate_lock_date>
  <apr>8.234</apr>
  <maturity_date>2022-01-16</maturity_date>
</pricing_data>
</request>
</pciserver_requests>
```

NOTE: The following legacy HMZ4 reporting service settings are required in the request but do not need to be populated with values.

```
<resp_id></resp_id>
<name></name>
<calendar_year></calendar_year>
<sign_name></sign_name>
<sign_phone></sign_phone>
```


9.3 Interperating Reports XML Responses

```
<?xml version="1.0" encoding="UTF-8"?><pci_responses>
<pci_responses>
<report_service>
  <response>
    <batch_result_url_1>
      https://www.wizenterprise.com/api/batchfiles/d3cc18e0-eddf-4424-be48-4d02d6c32ec9\_Transmittal\_Report.pdf?q=0balf85f-f54c-46d0-98a5-aede369393d4
    </batch_result_url_1>
    <batch_result_url_2>
      https://www.wizenterprise.com/api/batchfiles/d3cc18e0-eddf-4424-be48-4d02d6c32ec9\_Detailed\_Report.xlsx?q=0balf85f-f54c-46d0-98a5-aede369393d4
    </batch_result_url_2>
    <batch_result_url_3>
      https://www.wizenterprise.com/api/batchfiles/d3cc18e0-eddf-4424-be48-4d02d6c32ec9\_IRS\_Report.pdf?q=0balf85f-f54c-46d0-98a5-aede369393d4
    </batch_result_url_3>
  </response>
</report_service>
</pci_responses>
```

10. Submission Service

10.1 Submission XML Request for HMZ4 2016 and prior years

The Submission Service provides institutions the HMDA.dat file that they will use for their annual regulatory submission.

```
<?xml version="1.0" encoding="UTF-8" ?>
<pciserver_requests xmlns="http://www.pciwiz.com/PCiServer">
<authentication>
<institution_id></institution_id>
<vendor_id></vendor_id>
<username></username>
<password></password>
</authentication>
<services>
<submission_service>
<settings>
  <lar_type>hmz4</lar_type>
  <current_year>2016</current_year>
  <resp_id>9876543219</resp_id>
  <name>John Doe</name>
  <activity_year>2016</activity_year>
  <regulator>2</regulator>
  <address1>30 Winter St</address1>
  <address2></address2>
  <city>Boston</city>
  <state>MA</state>
  <zip>02108</zip>
  <zip4>4720</zip4>
  <parent_name>Wolters Kluwer</parent_name>
  <parent_address1>30 Winter St</parent_address1>
  <parent_address2 />
  <parent_city>Boston</parent_city>
  <parent_state>MA</parent_state>
  <parent_zip>02108</parent_zip>
  <parent_zip4>4720</parent_zip4>
  <con_name>John Doe</con_name>
```

Consumer Compliance Solutions

```
<con_phone>617-535-3000</con_phone>
<taxid>03-0000034</taxid>
<fax>617-535-3000</fax>
<email>john_doe@wolterskluwer.com</email>
<sign_name>John Doe</sign_name>
<sign_phone>617-535-3000</sign_phone>
<diskette>N</diskette>
<transcode>2</transcode>
<systemdate />
</settings>
</submission_service>
</services>
<request>
<request_id>2</request_id>
<loan_information>
  <application_number>123456789</application_number>
  <application_date>2016-01-01</application_date>
  <loan_type>1</loan_type>
  <property_type>1</property_type>
  <loan_purpose>1</loan_purpose>
  <occupancy>1</occupancy>
  <loan_amount>99</loan_amount>
  <preapproval_request>3</preapproval_request>
</loan_information>
<action>
  <action_taken>3</action_taken>
  <action_date>2016-07-05</action_date>
</action>
<property_location>
  <address_1>3737 Kirkwood Highway</address_1>
  <address_2 />
  <city>Wilmington</city>
  <state>DE</state>
  <zip>19808</zip>
  <zip4 />
</property_location>
<census_info>
  <msa>14484</msa>
  <state_fips>25</state_fips>
  <county_fips>025</county_fips>
  <census_tract>0701.00</census_tract>
</census_info>
<applicant_info>
  <applicant_income>100</applicant_income>
  <ethnicity>3</ethnicity>
  <coapplicant_ethnicity>1</coapplicant_ethnicity>
  <race_1>2</race_1>
  <race_2>3</race_2>
  <race_3>4</race_3>
  <race_4>5</race_4>
  <race_5>6</race_5>
  <coapplicant_race_1>2</coapplicant_race_1>
  <coapplicant_race_2>3</coapplicant_race_2>
  <coapplicant_race_3>4</coapplicant_race_3>
  <coapplicant_race_4>5</coapplicant_race_4>
  <coapplicant_race_5>6</coapplicant_race_5>
  <sex>1</sex>
  <coapplicant_sex>1</coapplicant_sex>
</applicant_info>
<purchaser_type>
  <purchaser>5</purchaser>
</purchaser_type>
<denial_reasons>
```

Consumer Compliance Solutions

```
<denial_reason_1>1</denial_reason_1>
<denial_reason_2>2</denial_reason_2>
<denial_reason_3>3</denial_reason_3>
</denial_reasons>
<pricing_data>
  <hoepa_status>2</hoepa_status>
  <lien_status>1</lien_status>
  <rate_spread>7.55</rate_spread>
  <rate_type>2</rate_type>
  <loan_term>30</loan_term>
  <var_term> 10</var_term>
  <rate_lock_date>2016-01-01</rate_lock_date>
  <apr>4.3</apr>
  <maturity_date>2045-05-03</maturity_date>
</pricing_data>
</request>
</pciserver_requests>
```

10.2 Interpreting Submission XML Responses

The Submission XML Response returns a specific URL where the requested HMDA.dat can be downloaded for use.

```
<?xml version="1.0" encoding="UTF-8"?><pci_responses>
<submission_service>
<response>
  <batch_result_url_1>https://www.wizenterprise.com/Batch/0266d310-51fb-43c6-9f58-1cbfd5447c9f\_HMZ4.dat</batch_result_url_1>
</response>
</submission_service>
```

10.3 Submission XML Request for HMZ4 2017

The Submission Service provides institutions the HMDA.txt file that they will use for their annual regulatory submission.

```
<?xml version="1.0" encoding="UTF-8"?>
<pciserver_requests xmlns="http://www.pciwiz.com/PCiServer">
  <authentication>
    <institution_id></institution_id>
    <vendor_id></vendor_id>
    <username></username>
    <password></password>
  </authentication>
  <services>
    <submission_service>
      <settings>
        <lar_type>hmz4</lar_type>
        <current_year>2017</current_year>
        <resp_id>9876543219</resp_id>
        <name>John Joe</name>
        <activity_year>2017</activity_year>
        <regulator>2</regulator>
        <address1>30 Winter St</address1>
        <address2>suite 12</address2>
        <city>Boston</city>
        <state>MA</state>
        <zip>02108</zip>
        <zip4>4720</zip4>
        <parent_name>pci</parent_name>
        <parent_address1>30 winter st</parent_address1>
        <parent_address2></parent_address2>
```

Consumer Compliance Solutions

```
<parent_city>boston</parent_city>
<parent_state>MA</parent_state>
<parent_zip>02108</parent_zip>
<parent_zip4>4720</parent_zip4>
<con_name>John Doe</con_name>
<con_phone>617-535-3000</con_phone>
<taxid>03-0000034</taxid>
<fax>617-535-3000</fax>
<email>john_doe@pciwiz.com</email>
<sign_name>john Doe</sign_name>
<sign_phone>617-535-3000</sign_phone>
<diskette>N</diskette>
<transcode>2</transcode>
<systemdate></systemdate>
</settings>
</submission_service>
</services>
<request>
  <request_id>2</request_id>
  <loan_information>
    <application_number>1111</application_number>
    <application_date>2011-01-01</application_date>
    <loan_type>1</loan_type>
    <property_type>1</property_type>
    <loan_purpose>1</loan_purpose>
    <occupancy>1</occupancy>
    <loan_amount>99</loan_amount>
    <preapproval_request>3</preapproval_request>
  </loan_information>
  <action>
    <action_taken>3</action_taken>
    <action_date>2011-07-05</action_date>
  </action>
  <property_location>
    <address_1>3737 Kirkwood Highway</address_1>
    <address_2></address_2>
    <city>Wilmington</city>
    <state>DE</state>
    <zip>19808</zip>
    <zip4></zip4>
  </property_location>
  <census_info>
    <msa>14484</msa>
    <state_fips>MA</state_fips>
    <county_fips>025</county_fips>
    <census_tract>0701.00</census_tract>
  </census_info>
  <applicant_info>
    <applicant_income>100</applicant_income>
    <ethnicity>3</ethnicity>
    <coapplicant_ethnicity>1</coapplicant_ethnicity>
    <race_1>2</race_1>
    <race_2>3</race_2>
    <race_3>4</race_3>
    <race_4>5</race_4>
    <race_5>6</race_5>
    <coapplicant_race_1>2</coapplicant_race_1>
    <coapplicant_race_2>3</coapplicant_race_2>
    <coapplicant_race_3>4</coapplicant_race_3>
    <coapplicant_race_4>5</coapplicant_race_4>
    <coapplicant_race_5>6</coapplicant_race_5>
    <sex>1</sex>
    <coapplicant_sex>1</coapplicant_sex>
```

Consumer Compliance Solutions

```
</applicant_info>
<purchaser_type>
  <purchaser>5</purchaser>
</purchaser_type>
<denial_reasons>
  <denial_reason_1>1</denial_reason_1>
  <denial_reason_2>2</denial_reason_2>
  <denial_reason_3>3</denial_reason_3>
</denial_reasons>
<pricing_data>
  <hoepa_status>2</hoepa_status>
  <lien_status>1</lien_status>
  <rate_spread>07.55</rate_spread>
  <loan_term>30</loan_term>
  <rate_lock_date>2011-01-01</rate_lock_date>
  <apr>4.3</apr>
  <maturity_date>2011-05-03</maturity_date>
</pricing_data>
</request>
</pciserver_requests>
```

10.4 Interpreting Submission XML Responses for HMZ4 2017

The Submission XML Response returns a specific URL where the requested HMDA.dat can be downloaded for use.

Response for batch request:

```
<?xml version="1.0" encoding="UTF-8"?><pci_responses>
<submission_service>
<response>
  <batch_result_url_1>
https://qa2.wizenterprise.com/api/batchfiles/20318434-fa0f-487d-bfc7-2c4d0f2cfb23\_HMZ4.txt?q=MjA
</response>
</submission_service>
```

Response for single request:

```
<?xml version="1.0" encoding="utf-8"?><soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"><soap:Body><SubmitRequestResponse
xmlns="http://www.pciwiz.com/k2server"><SubmitRequestResult><?xml version="1.0" encoding="UTF-
8"?><pci_responses><submission_service><response><submission><submission_status>Successful</submission_sta
tus></submission><Description></Description><Disk_Record></Disk_Record><Lar_Record>2|9876543219|2|1111|201
10101|1|1|1|1|99|3|3|20110705|14484|MA|025|0701.00|3|1|2|3|4|5|6|2|3|4|5|6|1|1|100|5|1|2|3|07.55|2|1</Lar_Record><
Transmittal_Record>1|9876543219|2|201706020259|2017|03-0000034|1|John Joe|30 Winter St|Boston|MA|02108-
4720|pci|30 winter st|boston|MA|02108-4720|John Doe|617-535-3000|617-535-
000|john_doe@pciwiz.com</Transmittal_Record><IsValidatationError>False</IsValidatationError>
<ValidationErrorMessageString></ValidationErrorMessageString><request_id>2</request_id></response></submission_service>
</pci_responses></SubmitRequestResult></SubmitRequestResponse></soap:Body></soap:Envelope>
```

10.5 Submission Service: <settings> Element for HMDF 2018

The Submission Service provides institutions the HMDF.txt (HMDA Dodd Frank) file that the Bank's compliance team will use for their annual regulatory submission.

<settings> Element	
Child Element	Description
lar_type	HMDF
activity_year	Enter, in numeral form, the calendar year the data submission covers, using YYYY format. Example: If the data covers calendar year 2018, enter 2018
activity_quarter	Indicate the calendar quarter the data submission covers by entering the applicable Code from the following: Code 4 – Annual submissions for covered loans and applications with respect to which final action was taken from January 1st (01/01) and December 31st (12/31)
institution_name	Enter the name of the financial institution that is submitting HMDA data. Example: If the submission contains HMDA data for Ficus Bank, enter Ficus Bank.
con_name	Example: If the contact person's name is Erika Otis, enter Erika Otis.
con_phone	Example: If the phone number is (999) 999-9999, enter 999-999-9999
email	Example: If the e-mail address is erikaotis@bank.com, enter erikaotis@bank.com.

address1	<p>Enter the street address of the contact person’s office as one (1) data field. U.S. Postal Service Publication 28, SubSections 231-239 can be used as a guide for formatting the street address. Address components include, as applicable, the following individual items:</p> <ul style="list-style-type: none"> • Primary Address Number • Predirectional • Street Name • Prefix • Suffix • Postdirectional • Secondary Address Identifier, such as suite • Secondary Address, such as suite number <p>Example: 4321 W Random Blvd Ste 201 Primary Address Number: “4321” Predirectional: “W” Street Name: “Random” Suffix: “Blvd” Secondary Address Identifier: “Ste” Secondary Address: “201”</p>
city	<p>Enter the city of the contact person’s office as one (1) data field.</p>
state	<p>Enter the two-letter state code of the contact person’s office as one (1) data field.</p>
zip	<p>Enter the ZIP code of the contact person’s office as one (1) data field. Examples: 90049 or 90049-9998</p>
zip4	<p>(Optional) Enter the ZIP+4 code of the contact person’s office as one (1) data field.</p>
regulator	<p>Indicate your financial institution’s appropriate Federal agency by entering the applicable Code from the following:</p> <ul style="list-style-type: none"> Code 1 – Office of the Comptroller of the Currency (OCC) Code 2 – Federal Reserve System (FRS) 59 Code 3 – Federal Deposit Insurance Corporation (FDIC) Code 5 – National Credit Union Administration (NCUA) Code 7 – United States Department of Housing and Urban Development (HUD) Code 9 – Consumer Financial Protection Bureau (CFPB)

entries_number	Enter, in numeral form, the total number of entries contained in the submission. Example: If your institution is submitting 5,000 entries, enter 5000.
taxid	Enter your financial institution's Federal Taxpayer Identification Number. Example: If your institution's Federal Taxpayer Identification number is 99-9999999, enter 99-9999999.
lei	Enter your financial institution's LEI as defined in Paragraph 4(a)(1)(i)(A). Example: If your institution's LEI is 10Bx939c5543TqA1144M, enter 10Bx939c5543TqA1144M.

10.6 Submission Service XML Request for HMDF 2018

HMDF 2018 Submission

```
<?xml version="1.0" encoding="UTF-8"?>
<pciserver_requests
  xmlns="http://www.pciwiz.com/PCiServer">
  <authentication>
    <institution_id>CF315985-66DA-438B-8D37-62F4EA546C99</institution_id>
    <vendor_id>80C1BDCB-82AE-496D-ACFE-842A74D2DFD2</vendor_id>
    <username>samir.khillar@wolterskluwer.com</username>
    <password>march@2018</password>
  </authentication>
  <services>
    <submission_service>
      <settings>
        <lar_type>hmdf</lar_type>
        <activity_year>2018</activity_year>
        <institution_name>Financial Institution Name</institution_name>
        <activity_quarter>4</activity_quarter>
        <con_name>Contact person name</con_name>
        <con_phone>555-555-5555</con_phone>
        <email>ContactPerson@bank.com</email>
        <address1>130 Turner ST</address1>
        <city>Waltham</city>
        <state>MA</state>
        <zip>02453</zip>
        <regulator>9</regulator>
        <entries_number>3</entries_number>
        <taxid>12-3456789</taxid>
        <lei>12345678901111111111</lei>
      </settings>
    </submission_service>
  </services>
</pciserver_requests>
```


Consumer Compliance Solutions

```
<request>
  <request_id>2</request_id>
  <loan_identifier_information>
    <uli>123456789012345678901234567890123456789012300</uli>
    <lei>12345678901234567890</lei>
    <application_number>12345678901234567890123</application_number>
    <mortgage_loan_origination_NMLSR_id>123450</mortgage_loan_origination_NMLSR_id>
  </loan_identifier_information>
</loan_information>
  <is_exempt>>false</is_exempt>
  <application_date>2018-03-27</application_date>
  <loan_type>1</loan_type>
  <property_type>1</property_type>
  <loan_purpose>1</loan_purpose>
  <occupancy>2</occupancy>
  <loan_amount_dollars>250597.95</loan_amount_dollars>
  <hoepa_status>2</hoepa_status>
  <lien_status>1</lien_status>
  <prepayment_penalty_term>24</prepayment_penalty_term>
  <loan_term_months>360</loan_term_months>
  <introductory_rate_period>24</introductory_rate_period>
  <balloon_payment>2</balloon_payment>
  <interest_only_payment>2</interest_only_payment>
  <negative_amortization>2</negative_amortization>
  <other_non_amortizing>2</other_non_amortizing>
  <application_method>1</application_method>
  <initially_payable_to_your_institution>1</initially_payable_to_your_institution>
  <reverse_mortgage>2</reverse_mortgage>
  <open_end_line_of_credit>2</open_end_line_of_credit>
  <business_commercial_purpose>2</business_commercial_purpose>
  <preapproval_request>2</preapproval_request>
  <agency_code>9</agency_code>
</loan_information>
<action>
  <action_taken>1</action_taken>
  <action_date>2018-03-30</action_date>
</action>
<property_location>
  <address_1>30 Winter Street</address_1>
  <address_2></address_2>
  <city>Boston</city>
  <state>MA</state>
  <zip>02108</zip>
  <zip4></zip4>
</property_location>
<census_info>
  <msa>14454</msa>
  <state_fips>25</state_fips>
  <county_fips>025</county_fips>
  <census_tract>0701.01</census_tract>
</census_info>
<applicant_info>
  <ethnicity_1>1</ethnicity_1>
  <ethnicity_2>11</ethnicity_2>
  <ethnicity_3>12</ethnicity_3>
```

Consumer Compliance Solutions

```
<ethnicity_4>13</ethnicity_4>
<ethnicity_5>14</ethnicity_5>
<ethnicity_other></ethnicity_other>
<ethnicity_determinant>2</ethnicity_determinant>
<race_1>4</race_1>
<race_2>3</race_2>
<race_3>3</race_3>
<race_4>1</race_4>
<race_5>21</race_5>
<race1_other></race1_other>
<race27_other></race27_other>
<race44_other></race44_other>
<race_determinant>2</race_determinant>
<sex>1</sex>
<sex_determinant>2</sex_determinant>
<age>27</age>
</applicant_info>
<co_applicant_info>
  <no_coapplicant>1</no_coapplicant>
  <coapplicant_ethnicity_1></coapplicant_ethnicity_1>
  <coapplicant_ethnicity_2></coapplicant_ethnicity_2>
  <coapplicant_ethnicity_3></coapplicant_ethnicity_3>
  <coapplicant_ethnicity_4></coapplicant_ethnicity_4>
  <coapplicant_ethnicity_5></coapplicant_ethnicity_5>
  <coapplicant_ethnicity_other></coapplicant_ethnicity_other>
  <coapplicant_ethnicity_determinant></coapplicant_ethnicity_determinant>
  <coapplicant_race_1></coapplicant_race_1>
  <coapplicant_race_2></coapplicant_race_2>
  <coapplicant_race_3></coapplicant_race_3>
  <coapplicant_race_4></coapplicant_race_4>
  <coapplicant_race_5></coapplicant_race_5>
  <coapplicant_race1_other></coapplicant_race1_other>
  <coapplicant_race27_other></coapplicant_race27_other>
  <coapplicant_race44_other></coapplicant_race44_other>
  <coapplicant_race_determinant></coapplicant_race_determinant>
  <coapplicant_sex></coapplicant_sex>
  <coapplicant_sex_determinant></coapplicant_sex_determinant>
  <coapplicant_age></coapplicant_age>
</co_applicant_info>
<underwriting_information>
  <applicant_income>780</applicant_income>
  <credit_score>775</credit_score>
  <credit_model>1</credit_model>
  <credit_model_other></credit_model_other>
  <coapplicant_credit_score></coapplicant_credit_score>
  <coapplicant_credit_model></coapplicant_credit_model>
  <coapplicant_credit_model_other></coapplicant_credit_model_other>
  <debt_to_income>23.55</debt_to_income>
  <combined_loan_to_value>76.55</combined_loan_to_value>
  <automated_underwriting_system_1>1</automated_underwriting_system_1>
  <automated_underwriting_system_2>2</automated_underwriting_system_2>
  <automated_underwriting_system_3>3</automated_underwriting_system_3>
  <automated_underwriting_system_4>4</automated_underwriting_system_4>
  <automated_underwriting_system_5>5</automated_underwriting_system_5>
  <automated_underwriting_system_other></automated_underwriting_system_other>
```

Consumer Compliance Solutions

```
<automated_underwriting_system_result_1>1</automated_underwriting_system_result_1>
<automated_underwriting_system_result_2>2</automated_underwriting_system_result_2>
<automated_underwriting_system_result_3>3</automated_underwriting_system_result_3>
<automated_underwriting_system_result_4>4</automated_underwriting_system_result_4>
<automated_underwriting_system_result_5>5</automated_underwriting_system_result_5>

  <automated_underwriting_system_result_other></automated_underwriting_system_result_other>
</underwriting_information>
<purchaser_type>
  <purchaser>0</purchaser>
</purchaser_type>
<property_information>
  <construction_method>1</construction_method>
  <occupancy_type>1</occupancy_type>
  <property_value>350500</property_value>
  <manufactured_home_secured_property_type>3</manufactured_home_secured_property_type>
  <manufactured_home_land_property_interest>5</manufactured_home_land_property_interest>
  <total_units>5</total_units>
  <multifamily_affordable_units>0</multifamily_affordable_units>
  <rent></rent>
  <no_of_bedroom></no_of_bedroom>
</property_information>
<denial_reasons>
  <denial_reason_1>10</denial_reason_1>
  <denial_reason_2></denial_reason_2>
  <denial_reason_3></denial_reason_3>
  <denial_reason_4></denial_reason_4>
  <denial_reason_other></denial_reason_other>
</denial_reasons>
<pricing_data>
  <rate_spread>NA</rate_spread>
  <total_loan_costs>2399.04</total_loan_costs>
  <total_points_and_fees>2399.04</total_points_and_fees>
  <origination_fees>2399.04</origination_fees>
  <discount_points>2399.04</discount_points>
  <lender_credits>2399.04</lender_credits>
  <interest_rate>04.125</interest_rate>
  <rate_spread_input>1</rate_spread_input>
  <rate_type>2</rate_type>
  <var_term>10</var_term>
  <rate_lock_date>2018-01-16</rate_lock_date>
  <apr>8.234</apr>
  <maturity_date>2022-01-16</maturity_date>
</pricing_data>
</request>
</pciserver_requests>
```

10.7 Interpreting Submission and Report XML Responses for HMDF 2018

The Submission XML Response returns a specific URLs where the requested HMDF.txt that can be downloaded for use.

Response for Submission request:

```
<?xml version="1.0" encoding="UTF-8"?><pci_responses>
<pci_responses>
  <submission_service>
    <response>
      <batch_result_url_1>
        https://www.wizenterprise.com/api/batchfiles/8ed7edba-d2ea-48da-b5f8-5b51ca33551b\_submission\_service.txt?q=0balf85f-f54c-46d0-98a5-aede369393d4
      </batch_result_url_1>
    </response>
  </submission_service>
</pci_responses>
```

10.8 Submission and Report Service XML Request for HMDF 2018

The Submission and Report XML Request give the ability to execute the submission and report service within one request.

```
<?xml version="1.0" encoding="UTF-8"?>
<pciserver_requests
  xmlns="http://www.pciwiz.com/PCiServer">
  <authentication>
    <institution_id>CF315985-66DA-438B-8D37-62F4EA546C99</institution_id>
    <vendor_id>80C1BDCB-82AE-496D-ACFE-842A74D2DFD2</vendor_id>
    <username>samir.khillar@wolterskluwer.com</username>
    <password>march@2018</password>
  </authentication>
  <services>
    <submission_service>
      <settings>
        <lar_type>hmdf</lar_type>
        <activity_year>2018</activity_year>
        <institution_name>Financial Institution Name</institution_name>
        <activity_quarter>4</activity_quarter>
        <con_name>Contact person name</con_name>
        <con_phone>555-555-5555</con_phone>
        <email>ContactPerson@bank.com</email>
        <address1>130 Turner ST</address1>
        <city>Waltham</city>
        <state>MA</state>
        <zip>02453</zip>
        <regulator>9</regulator>
        <entries_number>3</entries_number>
        <taxid>12-3456789</taxid>
        <lei>12345678901111111111</lei>
      </settings>
    </submission_service>
```

Consumer Compliance Solutions

```
<report_service>
  <settings>
    <lar_type>hmdf</lar_type>
    <institution_name>Financial Institution Name</institution_name>
    <activity_year>2018</activity_year>
    <activity_quarter>4</activity_quarter>
    <con_name>Contact person name</con_name>
    <con_phone>555-555-5555</con_phone>
    <email>ContactPerson@bank.com</email>
    <address1>130 Turner ST</address1>
    <city>Waltham</city>
    <state>MA</state>
    <zip>02453</zip>
    <zip4></zip4>
    <regulator>9</regulator>
    <entries_number>3</entries_number>
    <taxid>12-3456789</taxid>
    <lei>12345678901111111111</lei>
    <report_type>pdf</report_type>
    <detailed_report>true</detailed_report>
    <transmittal_report>true</transmittal_report>
    <irs_report>true</irs_report>
      <resp_id></resp_id>
      <name></name>
      <calendar_year></calendar_year>
      <sign_name></sign_name>
    <sign_phone></sign_phone>
  </settings>
</report_service>
<services>

<request>
  <request_id>2</request_id>
  <loan_identifier_information>
    <uli>123456789012345678901234567890123456789012300</uli>
    <lei>12345678901234567890</lei>
    <application_number>12345678901234567890123</application_number>
    <mortgage_loan_origination_NMLSR_id>123450</mortgage_loan_origination_NMLSR_id>
  </loan_identifier_information>
  <loan_information>
    <is_exempt>false</is_exempt>
    <application_date>2018-03-27</application_date>
    <loan_type>1</loan_type>
    <property_type>1</property_type>
    <loan_purpose>1</loan_purpose>
    <occupancy>2</occupancy>
    <loan_amount_dollars>250597.95</loan_amount_dollars>
    <hoepa_status>2</hoepa_status>
    <lien_status>1</lien_status>
    <prepayment_penalty_term>24</prepayment_penalty_term>
    <loan_term_months>360</loan_term_months>
    <introductory_rate_period>24</introductory_rate_period>
    <balloon_payment>2</balloon_payment>
    <interest_only_payment>2</interest_only_payment>
    <negative_amortization>2</negative_amortization>
```

Consumer Compliance Solutions

```
<other_non_amoritizing>2</other_non_amoritizing>
<application_method>1</application_method>
<initially_payable_to_your_institution>1</initially_payable_to_your_institution>
<reverse_mortgage>2</reverse_mortgage>
<open_end_line_of_credit>2</open_end_line_of_credit>
<business_commercial_purpose>2</business_commercial_purpose>
<preapproval_request>2</preapproval_request>
<agency_code>9</agency_code>
</loan_information>
<action>
  <action_taken>1</action_taken>
  <action_date>2018-03-30</action_date>
</action>
<property_location>
  <address_1>30 Winter Street</address_1>
  <address_2></address_2>
  <city>Boston</city>
  <state>MA</state>
  <zip>02108</zip>
  <zip4></zip4>
</property_location>
<census_info>
  <msa>14454</msa>
  <state_fips>25</state_fips>
  <county_fips>025</county_fips>
  <census_tract>0701.01</census_tract>
</census_info>
<applicant_info>
  <ethnicity_1>1</ethnicity_1>
  <ethnicity_2>11</ethnicity_2>
  <ethnicity_3>12</ethnicity_3>
  <ethnicity_4>13</ethnicity_4>
  <ethnicity_5>14</ethnicity_5>
  <ethnicity_other></ethnicity_other>
  <ethnicity_determinant>2</ethnicity_determinant>
  <race_1>4</race_1>
  <race_2>3</race_2>
  <race_3>3</race_3>
  <race_4>1</race_4>
  <race_5>21</race_5>
  <race1_other></race1_other>
  <race27_other></race27_other>
  <race44_other></race44_other>
  <race_determinant>2</race_determinant>
  <sex>1</sex>
  <sex_determinant>2</sex_determinant>
  <age>27</age>
</applicant_info>
<co_applicant_info>
  <no_coapplicant>1</no_coapplicant>
  <coapplicant_ethnicity_1></coapplicant_ethnicity_1>
  <coapplicant_ethnicity_2></coapplicant_ethnicity_2>
  <coapplicant_ethnicity_3></coapplicant_ethnicity_3>
  <coapplicant_ethnicity_4></coapplicant_ethnicity_4>
  <coapplicant_ethnicity_5></coapplicant_ethnicity_5>
```

Consumer Compliance Solutions

```
<coapplicant_ethnicity_other></coapplicant_ethnicity_other>
<coapplicant_ethnicity_determinant></coapplicant_ethnicity_determinant>
<coapplicant_race_1></coapplicant_race_1>
<coapplicant_race_2></coapplicant_race_2>
<coapplicant_race_3></coapplicant_race_3>
<coapplicant_race_4></coapplicant_race_4>
<coapplicant_race_5></coapplicant_race_5>
<coapplicant_race1_other></coapplicant_race1_other>
<coapplicant_race27_other></coapplicant_race27_other>
<coapplicant_race44_other></coapplicant_race44_other>
<coapplicant_race_determinant></coapplicant_race_determinant>
<coapplicant_sex></coapplicant_sex>
<coapplicant_sex_determinant></coapplicant_sex_determinant>
<coapplicant_age></coapplicant_age>
</co_applicant_info>
<underwriting_information>
  <applicant_income>780</applicant_income>
  <credit_score>775</credit_score>
  <credit_model>1</credit_model>
  <credit_model_other></credit_model_other>
  <coapplicant_credit_score></coapplicant_credit_score>
  <coapplicant_credit_model></coapplicant_credit_model>
  <coapplicant_credit_model_other></coapplicant_credit_model_other>
  <debt_to_income>23.55</debt_to_income>
  <combined_loan_to_value>76.55</combined_loan_to_value>
  <automated_underwriting_system_1>1</automated_underwriting_system_1>
  <automated_underwriting_system_2>2</automated_underwriting_system_2>
  <automated_underwriting_system_3>3</automated_underwriting_system_3>
  <automated_underwriting_system_4>4</automated_underwriting_system_4>
  <automated_underwriting_system_5>5</automated_underwriting_system_5>
  <automated_underwriting_system_other></automated_underwriting_system_other>
  <automated_underwriting_system_result_1>1</automated_underwriting_system_result_1>
  <automated_underwriting_system_result_2>2</automated_underwriting_system_result_2>
  <automated_underwriting_system_result_3>3</automated_underwriting_system_result_3>
  <automated_underwriting_system_result_4>4</automated_underwriting_system_result_4>
  <automated_underwriting_system_result_5>5</automated_underwriting_system_result_5>
  <automated_underwriting_system_result_other></automated_underwriting_system_result_other>
</underwriting_information>
<purchaser_type>
  <purchaser>0</purchaser>
</purchaser_type>
<property_information>
  <construction_method>1</construction_method>
  <occupancy_type>1</occupancy_type>
  <property_value>350500</property_value>
  <manufactured_home_secured_property_type>3</manufactured_home_secured_property_type>
  <manufactured_home_land_property_interest>5</manufactured_home_land_property_interest>
  <total_units>5</total_units>
  <multifamily_affordable_units>0</multifamily_affordable_units>
  <rent></rent>
  <no_of_bedroom></no_of_bedroom>
</property_information>
<denial_reasons>
  <denial_reason_1>10</denial_reason_1>
```

Consumer Compliance Solutions

```
<denial_reason_2></denial_reason_2>
<denial_reason_3></denial_reason_3>
<denial_reason_4></denial_reason_4>
<denial_reason_other></denial_reason_other>
</denial_reasons>
<pricing_data>
  <rate_spread>NA</rate_spread>
  <total_loan_costs>2399.04</total_loan_costs>
  <total_points_and_fees>2399.04</total_points_and_fees>
  <origination_fees>2399.04</origination_fees>
  <discount_points>2399.04</discount_points>
  <lender_credits>2399.04</lender_credits>
  <interest_rate>04.125</interest_rate>
  <rate_spread_input>1</rate_spread_input>
  <rate_type>2</rate_type>
  <var_term>10</var_term>
  <rate_lock_date>2018-01-16</rate_lock_date>
  <apr>8.234</apr>
  <maturity_date>2022-01-16</maturity_date>
</pricing_data>
</request>
</pciserver_requests>
```


10.9 Interpreting Submission and Report XML Responses for HMDF 2018

The Submission and Report XML Response returns a specific URLs where the requested HMDF.txt and the three reports can be downloaded for use.

Response for Submission and Reports request:

```
<?xml version="1.0" encoding="UTF-8"?><pci_responses>
<pci_responses>
  <submission_service>
    <response>
      <batch_result_url_1>
        https://www.wizenterprise.com/api/batchfiles/8ed7edba-d2ea-48da-b5f8-5b51ca33551b\_submission\_service.txt?q=0ba1f85f-f54c-46d0-98a5-aede369393d4
      </batch_result_url_1>
    </response>
  </submission_service>
  <report_service>
    <response>
      <batch_result_url_1>
        https://www.wizenterprise.com/api/batchfiles/d3cc18e0-eddf-4424-be48-4d02d6c32ec9\_Transmittal\_Report.pdf?q=0ba1f85f-f54c-46d0-98a5-aede369393d4
      </batch_result_url_1>
      <batch_result_url_2>
        https://www.wizenterprise.com/api/batchfiles/d3cc18e0-eddf-4424-be48-4d02d6c32ec9\_Detailed\_Report.xlsx?q=0ba1f85f-f54c-46d0-98a5-aede369393d4
      </batch_result_url_2>
      <batch_result_url_3>
        https://www.wizenterprise.com/api/batchfiles/d3cc18e0-eddf-4424-be48-4d02d6c32ec9\_IRS\_Report.pdf?q=0ba1f85f-f54c-46d0-98a5-aede369393d4
      </batch_result_url_3>
    </response>
  </report_service>
</pci_responses>
```

11. Fair Lending

11.1 Fair Lending Information: <fairlending_information> Element

This element contains information about Fair Lending related data. All data fields in this element should be considered “**optional**” as they are not required for HMDA (DF) analysis. Should an institution wish to perform Fair Lending analysis within HMDA Wiz, these data fields should be considered Suggested or Optional.

<applicant_info> Element	
Child Element	Description
ltv	Loan-to-value Ratio Expressed as a numeric percentage. Example 90%, would be 90 <i>Suggested for Fair Lending Analysis</i>
NoteRate	Note Rate <i>Suggested for Fair Lending Analysis</i>
FERatio	Front End Ratio <i>Suggested for Fair Lending Analysis</i>
LoanProg	Loan Program Code <i>Suggested for Fair Lending Analysis</i>
Channel	Area that originated the loan. Example: Wholesale, Retail, Commercial <i>Suggested for Fair Lending Analysis</i>
NetOU	Net Overage or Underage Net Overage or Underage, 0 is par <i>Suggested for Fair Lending Analysis</i>
Broker	Broker Code or Broker Name <i>Optional for Fair Lending Analysis</i>
DocType	Document Type Examples: Full Doc, Stated Income, No Doc, etc. <i>Optional for Fair Lending Analysis</i>
MARITAL_STATUS	Marital Status of Applicant Values are M, U, S M = Married U = Unmarried S = Separated <i>Suggested for Fair Lending Analysis</i>

COMARITAL_STATUS	Marital Status of Co-Applicant Values are M, U, S M = Married U = Unmarried S = Separated <i>Suggested for Fair Lending Analysis</i>
------------------	---

12. HMDA Wiz Website Overview

As previously stated, each institution licensed for HMDA Wiz receives their own website at www.wizenterprise.com (sponsored by Wolters Kluwer). Users will be able to log in with a username and password to manage their data files and perform standard HMDA data processing tasks including rate spread calculations, editing, geocoding. In addition, HMDA Wiz provides the ability to import external delimited text files via an Import Wizard, view performance indicating dashboards and create their own HMDA submission file with a three step Submission Wizard to walk them through the process.

The screenshot displays the HMDA Wiz dashboard interface. At the top, there is a navigation bar with the Wolters Kluwer logo and several menu items: Reports, Processes, Profile, Support, and Logout. Below this is a secondary navigation bar with categories like Data preparation, Data analysis, Fair lending, Data settings, and Admin, along with a Filters button and a 2020 HMDA file indicator.

The main content area is titled "Welcome to CRA Wiz SaaS® and HMDA Wiz®" and includes the user email "andrew.sheeran@wolterskluwer.com".

The dashboard is divided into three main sections:

- Announcements:** Contains three entries for HMDA Wiz releases (5.0, 4.12, and 4.11), each with a "Read more" link.
- Favorites:** Lists "HMDA DF" files, including "2020 HMDA file" and "HMDA DF Format", each with a close button.
- Recent activities:** Shows a log of actions such as "Records updated in 2020 HMDA file" and "2020 YTD file.csv imported and 2020 YTD file created" with timestamps.

While it is certainly possible for an institution to limit their HMDA data processing tasks to those of the HMDA Wiz web services, many clients enjoy the added benefit of logging into their www.wizenterprise.com for advanced processing, reporting and data management tasks.

12.1 Data Files

The HMDA Wiz File Management Section under Data preparation allows clients the ability to manage their various HMDA data files. The File Management screen displays both the user defined file name as well as the file's file ID (LAR ID)

Note: These files would be the exact ones returned by a Get LAR web service request.

The screenshot shows the 'File management' interface. On the left is a sidebar with a folder tree including 'HMDA DF', 'Small Business and Farm', 'HMDA', 'Consumer', 'Branch and ATM', 'Community Development', and 'Other'. The main area displays a table of HMDA DF files. The selected file is '2020 YTD file' with Activity Year 2021 and Census Year 2010. Below the table, the file's details are shown: LAR Id 32328 (highlighted), No. of records 2, Created date 04/06/2021 09:42:03 AM, and Sync with map Not Synchronized. Other details include Created by andrew.sheeran@wolterskluwer.com, Modified by, Folder path HMDA DF/2020 YTD file, and a Notes field.

With a right click on any specific file a user can perform the following functions on their desired file

The screenshot shows a list of files in the File Management interface. The '2020 HMDA file' is selected. A context menu is open over this file, listing the following actions: New, Edit, Make current, Edit file, Batch geocode, Clear geocoded fields, Edit check & update calculated fields, Synchronize columns, Download error report, Synchronize With Map, Copy OData link, and Transfer file(s). A secondary context menu is also visible over the file's details, listing: Cut, Copy, Paste, Rename, and Delete.

12.2 Edit

The Edit Section allows the user to edit and save individual loan records. Many of the data fields in this screen have drop down menus that allow users to select from a list of valid values. Users can also geocode and calculate rate spread for records.

The bottom of the Edit screen provides a list of CFPB\FFIEC edit check codes associated with each record. As users update the record, these edits are removed and refreshed in real-time. Additionally, users can select a specific error code and HMDA Wiz will highlight which data fields contain the invalid data for easy-to-use editing.

The screenshot displays the 'Test import' interface in Wolters Kluwer. The top navigation bar includes 'Data preparation', 'Data analysis', 'Fair lending', 'Data settings', 'Admin', 'Filters', and 'Test import'. The main content area is divided into three sections:

- Loan identifiers:** Shows fields for Universal loan identifier (SV9W1JFB8FZ82156PH772102962065295), Legal entity identifier (SV9W1JFB8FZ82156PH77), Application number (210296206), and NMLSR identifier (1275056).
- Loan information:** Includes application date (12/10/2018), loan type (Blank), loan purpose (31 - Refinancing), loan amount (\$150,000), action (1 - Originated), action date (01/04/2019), purchaser (0 - Not Sold), pre-approval requested (2 - Preapproval not requested), loan term (360 months), prepayment penalty term (24 months), introductory rate period (6 months), HOEPA status (2 - Not a high cost mortgage), and lien status (1 - Secured by a First Lien).
- Property information:** Geocoded by Wolters Kluwer. Fields include address (5436 S KIMBARK AVE), city (CHICAGO), state (IL - Illinois), ZIP (60615), MSA (16984 - Chicago-Naperville-Evanston, IL), county (031 - Cook), county 5 (17031), tract (4107.00 - Chicago), tract 11 (170314-10700), occupancy type (1 - Principal residence), construction method (1 - Site built (modular or prefabrication)), manufactured home secured property type (3 - Not applicable), manufactured home land property interest (5 - Not applicable), property value (\$200,000), total units (1), and multifamily affordable units (NA).

On the right side, the 'Edits' section shows a list of validity errors:

- V611:** An invalid Loan Type was reported. Please review the information below and update your file accordingly. 1) Loan Type must equal 1, 2, 3, or 4, and cannot be left blank.
- V619:** An invalid Action Taken Date was reported. Please review the information below and update your file accordingly.

12.3 Reports

The Standard Reports section contains a set of standard reports relating to Summary and Performance Analysis, Geocoding, and LAR / Exception Reports.

<input type="checkbox"/> Summary and Performance Analysis	
<input type="checkbox"/> Standard Summary Report	Details
<input type="checkbox"/> Summary Report - Action Taken	Details
<input type="checkbox"/> Summary Report - Purpose and Loan Type	Details
<input type="checkbox"/> Distribution of Products and Tracts by Income Level	Details
<input type="checkbox"/> Distribution of Products and Tracts by Minority Level	Details
<input type="checkbox"/> Disposition Summary Report	Details
<input type="checkbox"/> Underwriting and Pricing Analysis	Details
<input type="checkbox"/> Pricing Summary Report	Details
<input type="checkbox"/> Race - Race and Ethnicity vs Action	Details
<input type="checkbox"/> Race - Ethnicity and Race vs Action	Details
<input type="checkbox"/> Race - Race and Ethnicity vs Applicant Income	Details
<input type="checkbox"/> Race - Ethnicity and Race vs Applicant Income	Details
<input type="checkbox"/> Geocoding	
<input type="checkbox"/> Geocoding Exceptions	Details
<input type="checkbox"/> Geocoding Statistics	Details
<input type="checkbox"/> LAR / Exception	
<input type="checkbox"/> Edits Summary	Details
<input type="checkbox"/> Loan Application Register	Details
<input type="checkbox"/> Record Level Errors	Details

12.4 Wizards

The Wizards section includes two wizards - one designed to walk clients through the process of importing external delimited text files and a second to walk users through the process of creating an error-free submission file that meets the FFIEC/CFPB current regulatory standards.

12.4.1 Import

Data preparation ▾ Data analysis ▾ Fair lending ▾ Data settings ▾ Admin ▾
Filters
Test import

Saved import formats

Start new import

+ Install format
 + New folder

Name	Activity year	Last executed
<div style="background-color: #e6f2ff; padding: 2px 5px; display: flex; align-items: center;"> ▾ HMDA DF ⋮ </div> <div style="background-color: #e6f2ff; padding: 2px 5px; display: flex; align-items: center; margin-left: 15px;"> > Training Test ⋮ </div>		
<div style="display: flex; align-items: center;"> 📄 HMDA DF Format </div>	2019	03/08/2021 02:44 PM
<div style="display: flex; align-items: center;"> 📄 Standard CFPB HMDA DF - 2018 </div>	2018	Details ★ ⋮

12.4.2 Submission Wizard

Data preparation ▾ Data analysis ▾ Fair lending ▾ Data settings ▾ Admin ▾

Submission

1 File selection

2 Transmittal information

3 Submission package

Choose a file

Please select a file you would like to create a submission package from.

Combined 2018

Browse

LAR Type
HMDA DF

Activity year
2018

Options

You can run edit checks or search for duplicates to make sure your file is ready for the submission.

Run edit checks
 Check for duplicate records

Next

>



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